For the reasons set out in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is proposed to be amended as follows:

PART 63--NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401, et. seq.

2. It is proposed that part 63 be amended by adding subpart GGG to read as follows:

Subpart GGG-National Emission Standards for Pharmaceuticals Production

63.1250 Applicability

(a) Except as specified in paragraph (d) of this section, the provisions of this subpart apply to pharmaceutical manufacturing operations located at a major source of hazardous air pollutant emissions.

(b) The affected source subject to this subpart is the facility-wide collection of pharmaceutical process vents, storage tanks, wastewater and associated treatment residuals, heat exchange systems, cooling towers, and equipment components (pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems) associated with pharmaceutical manufacturing operations.

(c) If an additional pharmaceutical manufacturing process unit(s) is added to a plant site that is a major source, as defined in Section 112(a) of the Act, the addition shall be subject to the requirements for a new source in this subpart if: It is an addition that meets the definition of construction in § 63.2 of subpart A of this part; the addition has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of any combination of HAP, unless the Administrator establishes a lesser quantity; and the process unit(s) is dedicated to the manufacture of a single product or isolated intermediate.

(d) Table 1 specifies the provisions of subpart A that apply to an owner or operator of an affected source subject

to this subpart, and clarifies specific provisions in subpart A as necessary for this subpart.

(e) The provisions of this subpart do not apply to research and development facilities.

(f) The compliance dates for affected sources are as follows:

(1) An owner or operator of an existing affected source must comply with the provisions of this subpart within 3 years after the effective date of the standard.

(2) An owner or operator of a new or reconstructed affected source must comply with the provisions of this subpart immediately upon startup.

(3) Notwithstanding the requirements of paragraphs (f)(1) and (2) of this section, a new source which commences construction or reconstruction after [insert date of proposal] and before [date of promulgation] shall not be required to comply with such promulgated standard until 3 years after the date of promulgation if:

(i) The promulgated standard is more stringent than the proposed standard; and

(ii) The owner or operator complies with the standard as proposed during the 3-year period immediately after the effective date.

(g) For batch processes, the provisions of this subpart also apply during startup and shutdown. Periods of malfunction are regulated according to § 63.6 of subpart A.

(h) This subpart applies to all equipment leak emissions in the source category not covered by 40 CFR part 63 subpart I, which requires the implementation of subpart H requirements for components in methylene chloride and carbon tetrachloride service in pharmaceutical chemical synthesis operations. The requirements proposed in this rule do not affect the requirements of subpart I or H for these components. Only components not currently identified and affected by subpart I are considered in this standard.

§ 63.1251 Definitions

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section. If the same term is defined in subpart A of this part and in this section, it shall have the meaning given in this section for the purposes of subpart GGG.

Air pollution control device means equipment installed on a process vent storage tank, wastewater treatment exhaust stack, or combination thereof that reduces the mass of HAP emitted to the air. Examples include incinerators, carbon adsorption units, condensers, and gas absorbers. Process condensers are not considered air pollution control devices.

Batch cycle refers to manufacturing an intermediate or product from start to finish in a batch unit operation.

Batch emission episode means a discrete venting episode that may be associated with a single unit operation. A unit operation may have more than one batch emission episode. For example, a displacement of vapor resulting from the

charging of a vessel with HAP will result in a discrete emission episode that will last through the duration of the charge and will have an average flowrate equal to the rate of the charge. If the vessel is then heated, there will also be another discrete emission episode resulting from the expulsion of expanded vapor. Both emission episodes may occur in the same vessel or unit operation. There are possibly other emission episodes that may occur from the vessel or other process equipment, depending on process operations.

Batch operation or Batch process means a noncontinuous operation involving intermittent or discontinuous feed into equipment, and, in general, involves the emptying of the equipment after the batch operation ceases and prior to beginning a new operation. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation.

Closed-vent system means a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and, if necessary, flow inducing devices that transport gas or vapor from an emission point to a control device or back into the process.

Combustion device means an individual unit of equipment, such as a flare, incinerator, process heater, or boiler, used for the combustion of HAP vapors.

Consumption means the makeup quantity of HAP entering a process that are not used as reactant. The quantity of

material used as reactant is the theoretical amount needed assuming a 100 percent stoichiometric conversion. Makeup is the net amount of material that must be added to the process to replenish losses.

Container, as used in the wastewater provisions, means any portable waste management unit that has a capacity greater than or equal to 0.1 m^3 in which a material is stored, transported, treated, or otherwise handled. Examples of containers are drums, hoses, barrels, tank trucks, barges, dumpsters, tank cars, dump trucks, and ships.

Continuous process means a process where the inputs and outputs flow continuously throughout the duration of the process. Continuous processes are typically steady state.

Continuous seal means a seal that forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the floating roof. A continuous seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

Controlled HAP emissions means the quantity of HAP discharged to the atmosphere. If no air pollution control devices are present, controlled emissions are the same as uncontrolled emissions.

Cover, as used in the wastewater provisions, means a device or system which is placed on or over a waste management unit containing wastewater or residuals so that the entire surface area is enclosed and sealed to minimize

air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed and sealed when not in use. Examples of covers include a fixed roof installed on a wastewater tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit.

External floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a storage vessel or waste management unit with no fixed roof.

Fill or filling means the introduction of hazardous air pollutant into a storage vessel or the introduction of a wastewater stream or residual into a waste management unit, but not necessarily to complete capacity.

Fixed roof means a cover that is mounted on a waste management unit or storage vessel in a stationary manner and that does not move with fluctuations in liquid level.

Floating roof means a cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and waste management unit or storage vessel wall.

Hard-piping means tubing that is manufactured and properly installed using good engineering judgment and standards, such as ANSI B31-3.

Individual drain system means the stationary system used to convey wastewater streams or residuals to a waste management unit. The term includes hard piping, all process drains and junction boxes, together with their associated sewer lines and other junction boxes, manholes, sumps, and lift stations, conveying wastewater streams or residuals. A segregated stormwater sewer system, which is a drain and collection system designed and operated for the sole purpose of collecting rainfall-runoff at a facility, and which is segregated from all other individual drain systems, is excluded from this definition.

Internal floating roof means a cover that rests or floats on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel or waste management unit that has a permanently affixed roof.

Isolated Intermediate means any intermediate that is removed from process equipment for temporary or permanent storage or transferred to shipping containers.

Junction box means a manhole or access point to a wastewater sewer system line or a lift station.

Liquid-mounted seal means a foam liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel or waste management and the floating roof. The seal is mounted continuously around the vessel or unit.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the total organic HAP in the stored or transferred liquid at the temperature equal to the

highest calendar-month average of the liquid storage or transferred temperature for liquids stored or transferred above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for liquids stored or transferred at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum Institute Publication 2517, Evaporative Loss From External Floating-Roof Tanks (incorporated by reference as specified in § 63.14 of subpart A of this part); or

(2) As obtained from standard reference texts; or

(3) As determined by the American Society for Testing and Materials Method D2879-83 (incorporated by reference as specified in § 63.14 of subpart A of this part); or

(4) Any other method approved by the Administrator.

Metallic shoe seal or mechanical shoe seal means a metal sheet that is held vertically against the wall of the storage vessel by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

Partially soluble HAP means a HAP listed in Table 2 of this subpart.

Pharmaceutical manufacturing process unit (PMPU) means any processing equipment assembled to process materials and manufacture a pharmaceutical product and associated storage

tanks, wastewater management units, or components such as pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, and instrumentation systems that are used in the manufacturing of a pharmaceutical product.

Pharmaceutical manufacturing operations include PMPU's and other processes and operations as well as associated equipment such as heat exchange systems that are located at a facility for the purpose of manufacturing pharmaceuticals.

Pharmaceutical product means any material described by the standard Industrial Classification (SIC) Code 283, or any other fermentation, biological or natural extraction, or chemical synthesis product regulated by the Food and Drug Administration, including components (excluding excipients) of pharmaceutical formulations, or intermediates used in the production of a pharmaceutical product.

Point of determination means the point where a wastewater stream exits the process or processes, storage tank, or equipment. The POD may be at the equipment or following the last recovery device.

Process means a logical grouping of processing equipment which collectively function to produce a pharmaceutical product or isolated intermediate. A process may consist of one or more unit operations. For the purpose of this subpart, process includes all or a combination of reaction, recovery, separation, purification, or other activity, operation, manufacture, or treatment which are

used to produce a product or isolated intermediate. The physical boundaries of a process are flexible, providing a process ends with a product or isolated intermediate, or with cessation of onsite processing. Nondedicated solvent recovery and nondedicated formulation operations are considered single processes that are used to recover or formulate numerous materials and/or products.

Process condenser means a condenser whose primary purpose is to recover material as an integral part of a unit operation. The condenser must support a vapor-to-liquid phase change for periods of source equipment operation that are above the boiling or bubble point of substance(s). Examples of process condensers include distillation condensers, reflux condensers, process condensers in line prior to the vacuum source, and process condensers used in stripping or flashing operations.

Process tank means a tank that is physically located within the bounds of a process that is used to collect material discharged from a feedstock storage tank or unit operation within the process and transfer this material to another unit operation within the process or a product storage tank. Surge control vessels and bottoms receivers that fit these conditions are considered process tanks.

Process vent means a vent from a unit operation through which a HAP-containing gas stream is, or has the potential to be, released to the atmosphere. Examples of process vents include, but are not limited to, vents on condensers

used for product recovery, bottom receivers, surge control vessels, reactors, filters, centrifuges, and process tanks. Process vents do not include vents on storage tanks regulated under § 63.1252(b), vents on wastewater emission sources regulated under § 63.1252(d), or pieces of equipment regulated under § 63.1252(e).

Production-indexed HAP consumption factor is the result of dividing the annual consumption of total HAP by the annual production rate, per process.

Production-indexed volatile organic compound (VOC) consumption factor is the result of dividing the annual consumption of total VOC by the annual production rate, per process.

Publicly owned treatment works (POTW) means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature as defined in section 212(2)(A) of the Clean Water Act, as amended [33 U.S.C. § 1292(2)(A)]. A POTW includes the treatment works, intercepting sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment. The POTW is defined at 40 CFR 403.3(0).

Reactor means a device or vessel in which one or more chemicals or reactants, other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed.

Recovery device means an individual unit of equipment used for the purpose of recovering chemicals for fuel value

(i.e., net positive heating value), use, reuse, or for sale for fuel value, use, or reuse. Air pollution control devices are not recovery devices. Process condensers are recovery devices. Other examples of equipment that may be recovery devices include organic removal devices such as decanters, strippers, or thin-film evaporation units.

Research and development facility means research or laboratory operations whose primary purpose is to conduct research and development into new processes and products, where the operations are under the close supervision of technically trained personnel, and is not engaged in the manufacture of products for commercial sale, except in a de minimis manner.

Residual means any HAP-containing liquid or solid material that is removed from a wastewater stream by a waste management unit or treatment process that does not destroy organics (nondestructive unit). Examples of residuals from nondestructive wastewater management units are: the organic layer and bottom residue removed by a decanter or organic-water separator and the overheads from a steam stripper or air stripper. Examples of materials which are not residuals are: silt; mud; leaves; bottoms from a steam stripper or air stripper; and sludges, ash, or other materials removed from wastewater being treated by destructive devices such as biological treatment units and incinerators.

Sewer line means a lateral, trunk line, branch line, or other conduit including, but not limited to, grates,

trenches, etc., used to convey wastewater streams or residuals to a downstream waste management unit.

Single-seal system means a floating roof having one continuous seal that completely covers the space between the wall of the storage vessel and the edge of the floating roof. This seal may be a vapor-mounted, liquid-mounted, or metallic shoe seal.

Soluble HAP means a HAP listed in Table 3 of this subpart.

Storage tank means a tank or other vessel that is used to store organic liquids that contain one or more HAP. The following are not considered storage tanks for the purposes of this subpart:

(1) Vessels permanently attached to motor vehicles such as trucks, railcars, barges, or ships;

(2) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;

(3) Vessels storing organic liquids that contain HAP only as impurities;

(4) Wastewater storage tanks; and

(5) Process tanks.

Surface impoundment means a waste management unit which is a natural topographic depression, manmade excavation, or diked area formed primarily of earthen materials (although it may be lined with manmade materials), which is designed to bold an accumulation of liquid wastes or waste containing free liquids. A surface impoundment is used for the purpose

of treating, storing, or disposing of wastewater or residuals, and is not an injection well. Examples of surface impoundments are equalization, settling, and aeration pits, ponds, and lagoons.

Treatment process means a specific technique that removes or destroys the organics in a wastewater or residual stream such as a stream stripping unit, thin-film evaporation unit, waste incinerator, biological treatment unit, or any other process applied to wastewater streams or residuals to comply with § 63.138 of this subpart. Most treatment processes are conducted in tanks. Treatment processes are a subset of waste management units.

Uncontrolled HAP emissions means a gas stream containing HAP which has exited the last recovery device, but which has not yet been introduced into an air pollution control device to reduce the mass of HAP in the stream. If the process vent is not routed to an air pollution control device, uncontrolled emissions are those HAP emissions released to the atmosphere.

Unit operation means those processing steps that occur within distinct equipment that are used, among other things, to prepare reactants, facilitate reactions, separate and purify products, and recycle materials. Equipment used for these purposes includes but is not limited to reactors, distillation columns, extraction columns, absorbers, decanters, dryers, condensers, and filtration equipment.

Vapor-mounted seal means a continuous seal that completely covers the annular space between the wall, the storage vessel or waste management unit and the edge of the floating roof and is mounted such that there is a vapor space between the stored liquid and the bottom of the seal.

Volatile organic compounds are defined in 40 CFR part 51, § 51.100.

Wastewater means water containing partially soluble or soluble HAP that is discarded from equipment that is part of the affected source and that is not exempted by the provisions of § 63.1252(d)(2). For the purposes of this subpart, noncontact cooling water is not considered a wastewater stream.

Waste management unit means a component, piece of equipment, structure, or transport mechanism in conveying, storing, treating, or disposing of wastewater streams or residuals. Examples of waste management units include wastewater tanks, air flotation units, surface impoundments, containers, oil-water or organic-water separators, individual drain systems, biological treatment units, waste incinerators, and organic removal devices such as steam and air stripper units, and thin film evaporation units. If such equipment is used for recovery then it is part of a pharmaceutical process and is not a waste management unit.

Wastewater tank means a stationary waste management unit that is designed to contain an accumulation of wastewater or residuals and is constructed primarily of

nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support. Wastewater tanks used for flow equalization are included in this definition.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water (e.g., flooded sewers that maintain water levels adequate to prevent air flow through the system) that creates a water barrier between the sewer line and the atmosphere. The water level of the seal must be maintained in the vertical leg of a drain in order to be considered a water seal.

§ 63.1252 Standards

(a) Each owner or operator of any affected source subject to the provisions of this subpart shall control HAP emissions to the level specified in this section on and after the compliance dates specified in § 63.1250 of this subpart.

(b) Storage tanks.

(1) The owner or operator of a storage tank meeting the criteria of paragraph (b)(l)(i) of this section is subject to the requirements of paragraph (b)(2) of this section. The owner or operator of a storage tank meeting the criteria of paragraph (b)(l)(ii) of this section is subject to the requirements of paragraph (b)(3) of this section.

(i) A storage tank with a design capacity greater than or equal to 38 m^3 (10,000 gallons) but less than 75 m^3 (20,000 gallons), and storing a liquid for which the maximum

true vapor pressure of total HAP is greater than or equal to 13.1 kPa (1.9 psia).

(ii) A storage tank with a design capacity greater than or equal to 75 m^3 storing a liquid for which the maximum true vapor pressure of total HAP is greater than or equal to 13.1 kPa.

(2) The owner or operator of a storage tank shall equip the affected storage tank with either a fixed roof with internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, or a closed vent system with control device that reduces inlet emissions of total HAP by 90 percent or greater, as demonstrated through the test methods and procedures in § 63.1253(c).

(3) The owner or operator of a storage tank shall equip the affected storage tank with either a fixed roof with internal floating roof, an external floating roof, an external floating roof converted to an internal floating roof, or a closed vent system with control device that meets the requirements of paragraphs (b)(3)(i) and (b)(3)(ii) of this section.

(i) Except as provided in paragraph (b)(3)(ii) of this section, the control device shall be designed and operated to reduce inlet emissions of total HAP by 95 percent or greater, as demonstrated through the test methods and procedures in § 63.1253(c).

(ii) If the owner or operator can demonstrate that a control device installed on a storage tank on or before [insert date of proposal] is designed to reduce inlet emissions of total HAP by greater than or equal to 90 percent but less than 95 percent, then the control device is required to be operated to reduce inlet emissions of total HAP by 90 percent or greater, as demonstrated through the test methods and procedures in § 63.1253(c).

(c) Process vents.

(1) The owner or operator of an existing affected source must comply with the process vent requirements of paragraphs (c)(2) and (c)(4) of this section or the requirements of paragraphs (c)(3) and (c)(4) of this section. The owner or operator of a new affected source must comply with the process vent requirements of paragraph (c)(5) of this section. Compliance with the required emission reductions shall be demonstrated through the applicable test methods and compliance procedures described in § 63.1253 of this subpart.

(2) Annual controlled HAP emissions shall not exceed 900 kilograms per year [2,000 pounds per year] from the sum of all process vents within a process that do not meet the criteria specified in paragraph (c)(4)(i) of this section.

(3) Annual uncontrolled HAP emissions from the sum of all process vents within a process that do not meet the criteria specified in paragraph (c)(4)(i) of this section shall be reduced by 93 percent or greater.

(4) Annual uncontrolled HAP emissions from each process vent meeting the requirements of paragraph (c)(4)(i) of this section and not meeting the requirements of paragraph (c)(4)(ii) of this section shall be reduced by 98 percent or greater.

(i) process vents having a flowrate equal to or less than the flowrate calculated when multiplying the annual uncontrolled HAP emissions, in lb/yr, by 0.02 and subtracting 1,000 according to the following equation:

$$FR = 0.02*(HL)-1,000$$

where:

FR = flowrate, scfm,

HL = yearly uncontrolled HAP emissions, lb/yr;

(ii) If the owner or operator can demonstrate that a control device, installed on a process vent subject to the requirements of paragraph (c)(4)(i) of this section on or before [insert date of proposal] was designed to reduce uncontrolled HAP emissions of total HAP by greater than or equal to 93 percent but less than 98 percent, then the control device is required to be operated to reduce inlet emissions of total HAP by 93 percent or greater.

(5) If the annual uncontrolled HAP emissions from the sum of all the process vents within a process is greater than 180 kg/yr (400 lb/yr) then the owner or operator shall reduce annual uncontrolled HAP emissions from the sum of all process vents within a process by 98 percent.

(d) Wastewater.

(1) The owner or operator of a new or existing affected source discharging wastewater with the concentrations described in paragraphs (d)(1)(i) through (d)(1)(v) of this section at the point of determination (POD) must comply with the provisions of paragraphs (d)(3) through (d)(4)(ii) of this section. The owner or operator of a new source discharging wastewater with concentrations described in paragraph (d)(1)(vi) of this section at the POD must comply with the provisions of paragraph (d)(4)(i) or (d)(4)(ii)(A) and (d)(4)(iii) of this section.

(i) Wastewater containing partially soluble HAP at a total concentration of greater than 1,300 parts per million by weight (ppmw) from any POD within a process with a total yearly load of soluble and/or partially soluble HAP of greater than 1 megagram per year (Mg/yr).

(ii) Wastewater containing partially soluble and/or soluble HAP at a total concentration of greater than 5,200 ppmw from any POD within a process with a total yearly load of soluble and/or partially soluble HAP of greater than 1 Mg/yr of total HAP.

(iii) Wastewater with a concentration of partially soluble and/or soluble HAP of greater than 10,000 ppmw total HAP at facilities that discharge greater than 1 Mg/yr of soluble and/or partially soluble HAP in the total yearly volume of all wastewaters generated.

(iv) Wastewater containing partially soluble HAP at a total concentration of greater than 1,300 parts per million by weight (ppmw) from any single POD with a total yearly load of soluble and/or partially soluble HAP of greater than 1 Mg/yr.

(v) Wastewater containing partially soluble and/or soluble HAP at a total concentration of greater than 5,200 ppmw from any single POD with a total yearly load of soluble and/or partially soluble HAP from any single POD of greater than 1 Mg/yr.

(vi) Wastewater containing soluble HAP at a total concentration of greater than 110,000 ppmw from any POD within a process or from any single POD with a total yearly load of soluble and/or partially soluble HAP of greater than 1 Mg/yr of total HAP.

(2) The following wastewaters are not subject to the wastewater provisions of this part:

(i) stormwater from segregated sewers;

(ii) water from fire-fighting and deluge systems, including testing of such systems;

(iii) spills; and

(iv) water from safety showers.

(3) An owner or operator of a facility shall comply with the requirements of §§ 63.133 through 63.137, and the control device requirements and inspection requirements of §§ 63.139 and 63.148, respectively, of subpart G for each waste management unit or treatment process that receives an

affected wastewater. The affected wastewater for purposes of this subpart is synonymous with the "Group 1" identification for wastewater used in the provisions of subpart F and G. Also for the purposes of this subpart, tanks for which it can be demonstrated that less than 5 percent of the total soluble and/or partially soluble HAP is emitted from a wastewater tank described in § 63.133(a)(1), in addition to a tank with surface agitation, shall be equipped with a fixed roof. The owner or operator shall also comply with the treatment requirements specified in paragraphs (d)(4) or (d)(5) of this section for each affected wastewater stream.

(4) Each affected wastewater stream shall be treated by one of the following methods:

(i) Recycle to the process in accordance with the requirements specified in § 63.138(f). Once a wastewater stream is returned to the process, the wastewater stream is no longer subject to this section.

(ii) Treat using a waste management unit or treatment process which meets conditions in paragraph (d)(4)(ii)(A) and (B) or (C) of this section:

(A) Reduces, by removal or destruction, the total mass of each individual partially soluble HAP by 99 percent, as determined by the procedures specified in § 63.145(c), 63.145(d), or 63.138(j); or to a level less than 50 parts per million by weight of total partially soluble HAP as determined by the procedures specified in § 63.145(b). This

option shall not be used when the treatment process is a biological treatment process, or when the wastewater stream is designated as a Group 1 wastewater stream as specified in § 63.132(e). Dilution shall not be used to achieve compliance with this option. Treatment process residuals shall be treated according to §§ 63.138(h) or 63.138(m).

(B) Reduces, by removal or destruction, the total mass of each individual soluble HAP by 90 percent, as determined by the procedures specified in § 63.145(c), 63.145(d), or 63.138(j). Treatment process residuals shall be treated according to § 63.138(h) or 63.138(m).

(C) Reduces, by biological treatment, the mass of total soluble and partially soluble HAP in wastewater for all pharmaceutical processes at the facility by 95 percent, as determined by the procedures specified in 40 CFR part 63 appendix C.

(iii) Treat using a waste management unit or treatment process which reduces, by removal or destruction, the total mass of each soluble HAP by 99 percent, as determined by the procedures specified in § 63.145(c), 63.145(d), or 63.138(j). Treatment process residuals shall be treated according to § 63.138(h) or 63.138(m).

(5) As an alternative to the treatment requirements in paragraph (d)(4)(ii)(B) of this section, an owner or operator may elect to treat affected wastewaters containing soluble HAP and less than 50 ppmw partially soluble HAP in the following manner if it can be demonstrated that less

than 5 percent of the total soluble HAP is emitted from the municipal sewer system:

(i) Treat in an enhanced biological treatment system that meets all of the following criteria:

(A) The biological treatment system is an aerated treatment unit(s) that contains biomass suspended in water followed by a clarifier that removes biomass from the treated water and recycles the recovered biomass to the aeration unit;

(B) The mixed liquor volatile suspended solids (biomass) is greater than 1 kg/m^3 homogeneously distributed throughout each aeration unit;

(C) The biomass in the enhanced biotreatment system is suspended and aerated in the water of the aeration unit(s) by either submerged air flow or mechanical agitation; and

(D) The enhanced biotreatment system is in compliance with requirements of the permitting authority.

(ii) Treat in a publicly-owned treatment works (POTW) that meets all of the following criteria:

(A) The POTW uses biological treatment that meets the criteria of paragraph (d)(5)(i) of this section.

(B) The POTW is in compliance with the General Pretreatment Regulations in 40 CFR part 403, including any applicable categorical pretreatment standards, and has pretreatment permit or equivalent approval under the authority of 40 CFR part 403.

(C) The POTW is in compliance with all applicable pretreatment standards adopted at 40 CFR part 439.

(6) For each treatment process used to comply with the requirements of (d)(4), the owner or operator shall comply with § 63.138(i), (k), and (l).

(7) Except as provided in (7)(i) and (ii), the owner or operator shall not discharge a separate phase that can be isolated through gravity separation from the aqueous phase to a wastewater management or treatment unit.

(i) Owners and operators discharging a separate organic phase shall separate and treat the organic according to § 63.138(h).

(ii) Owners and operators shall treat any aqueous phases having the characteristics of paragraphs (d)(1)(i) through (d)(1)(iv) of this section according to the requirements of paragraphs (d)(3) through (d)(6) of this section.

(e) Equipment leaks. The owner or operator shall comply with the requirements of Appendix GGGA of this subpart.

(f) Planned routine maintenance. The specifications and requirements in paragraphs (b) and (c) of this section for control devices do not apply during periods of planned routine maintenance. Maintenance wastewaters meeting the criteria for control as specified in paragraph (d)(1) of this section shall be treated in accordance with the

requirements of paragraphs (d)(3) through (d)(7) of this section.

(g) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraphs (b) and (c) of this section, as applicable, shall not exceed 240 hours per year.

(h) Pollution prevention alternative. Except as provided in 63.1252(h)(1) of this section, owners and operators may choose to meet the pollution prevention alternative requirement specified in either paragraph (h)(2) or (h)(3) of this section for any process, in lieu of the requirements specified in paragraphs (b), (c), (d), and (e) of this section. Compliance with paragraphs (h)(2) and (h)(3) of this section shall be demonstrated through the procedures in § 63.1253(f).

(1) Processes emitting HAP that are generated in the process must be controlled according to the requirements of § 63.1252(b), (c), (d), and (e).

(2) The production-indexed HAP consumption factor (kg HAP consumed/kg produced) shall be reduced by 75 percent from an average baseline established no earlier than the 1987 calendar year, or the first year thereafter in which the process was operational and data are available. No increase in the production-indexed VOC consumption factor for the applicable period of demonstration shall occur.

(3) Both requirements specified in paragraphs (h)(3)(i) and (ii) of this section are met.

(i) The production-indexed HAP consumption factor (kg HAP consumed/kg produced) shall be reduced by 50 percent from an average baseline established no earlier than the 1987 calendar year, or the first year thereafter in which the process was operational and data is available. No increase in the production-indexed VOC consumption factor for the applicable period of demonstration shall occur.

(ii) The total process HAP emissions shall be reduced from an uncontrolled baseline by an amount, in kg/yr, that, when divided by the annual production rate, in kg, will yield a value of at least 25 percent of the average baseline HAP production-indexed consumption factor established in (i). The annual reduction in HAP air emissions must be due to the use of the following control devices:

(A) Combustion control devices such as incinerators, flares or process heaters.

(B) Recovery control devices such as condensers and carbon adsorbers whose recovered product is destroyed or shipped offsite for destruction.

(C) Any control device that does not ultimately allow for recycling of material back to the process.

(D) Any control device for which the owner or operator can demonstrate that the use of the device in controlling HAP emissions will have no effect on the production-indexed consumption factor for the process.

(i) Heat exchange systems. Except as provided in paragraph (2) of this section, owners and operators of

affected sources shall comply with the requirements in paragraphs (1) of this section for heat exchange systems that cool process equipment or materials used in pharmaceutical manufacturing operations.

(1) The heat exchange system shall be treated according to the provisions of § 63.104.

(2) (i) The monitoring frequency shall be no less than quarterly.

(ii) The owner or operator of heat exchange systems which meet current good manufacturing practice (CGMP) requirements at 21 CFR part 211 may elect to use the physical integrity of the reactor as the surrogate indicator of heat exchange system leaks.

(j) Emissions averaging provisions. With the exception of paragraphs (j)(1) through (j)(5) of this section, owners or operators of storage tanks or processes subject to paragraph (b) or (c) of this section may choose to comply with the emission standards in paragraph (b) or (c) of this section by using emissions averaging requirements specified in § 63.1253(h) or (i) of this subpart for any storage tank or process.

(1) A State may restrict the owner or operator of an existing source to use only the procedures in § 63.1252(b) and (c) to comply with the emission standards where State Authorities prohibit averaging of HAP emissions.

(2) Emission sources subject to the requirements of paragraphs (b)(3)(ii) and (c)(2), (c)(4), and (c)(5) of this section may not be included in any averaging group.

(3) Processes which have been permanently shutdown or storage tanks permanently taken out of HAP service may not be included in any averaging group.

(4) Processes and storage tanks already controlled on or before November 15, 1990 may not be included in an emissions averaging group, except where the level of control is increased after November 15, 1990. In these cases, the uncontrolled emissions shall be the controlled emissions as calculated on November 15, 1990 for the purpose of determining the uncontrolled emissions as specified in § 63.1253(h) and (i) of this subpart.

(5) Emission points controlled to comply with a State or Federal rule other than this subpart, unless the level of control has been increased after November 15, 1990 above what is required by the other State or Federal rule. Only the control above what is required by the other State or Federal rule will be credited. However, if an emission point has been used to generate emissions averaging credit in an approved emissions average, and the point is subsequently made subject to a State or Federal rule other than this subpart, the point can continue to generate emissions averaging credit for the purpose of complying with the previously approved average.

(6) Not more than 20 processes and 20 tanks at an affected source may be included in an emissions averaging group.

(7) Compliance with the emissions standards in paragraph (b) of this section shall be satisfied when the overall percent reduction efficiency is greater than or equal to 90 percent for those tanks meeting the requirements of paragraph (b)(1)(i) of this section and 95 percent for those tanks meeting the requirements of paragraph (b)(1)(ii) of this section, as demonstrated using the test methods and compliance procedures specified in § 63.1253(h) of this subpart.

(8) Compliance with the emissions standards in paragraph (c) of this section shall be satisfied when the overall percent reduction efficiency is greater than or equal to 93 percent, as demonstrated using the test methods and compliance procedures specified in § 63.1253(i) of this subpart.

§ 63.1253 Test methods and compliance procedures.

(a) Emissions testing or engineering evaluations, as specified in paragraphs (c), (d), (e), and (f) of this section, are required to demonstrate initial compliance with § 63.1252 (b), (c), (d), and (h) respectively, of this subpart.

(b) Test Methods. When testing is conducted to measure emissions from an affected source, the test methods

specified in paragraphs (b)(l) through (b)(9) of this section shall be used.

(1) EPA Method 1 or 1A of appendix A of part 60 is used for sample and velocity traverses.

(2) EPA Method 2, 2A, 2C, or 2D of appendix A of part 60 is used for velocity and volumetric flow rates.

(3) EPA Method 3 of appendix A of part 60 is used for gas analysis.

(4) EPA Method 4 of appendix A of part 60 is used for stack gas moisture.

(5) EPA Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

(6) Methods 25A, 26 and/or Methods 18 and 25A, as appropriate, of appendix A of part 60 shall be used to determine the HAP concentration of air exhaust streams.

(7) Test conditions and durations shall be as specified in paragraphs (b)(7)(i) through (b)(7)(v) of this section, as appropriate.

(i) Testing of process vents on equipment operating as part of a continuous process will consist of three l-hour runs. Gas stream volumetric flow rates shall be measured every 15 minutes during each 1-hour run. The HAP concentration shall be determined from samples collected in an integrated sample over the duration of each l-hour test run, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated

sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. For continuous gas streams, the emission rate used to determine compliance shall be the average emission rate of the three test runs.

(ii) Testing of process vents on equipment where the flow of gaseous emissions is intermittent (batch operations) shall include testing for the worst-case episode or aggregated episodes in the batch cycle or cycles (in the event that equipment may be manifolded and vented through a common stack) or testing under normal conditions, provided that the operation of the device is limited to those conditions that existed during testing under representative worst-case or normal conditions. Testing shall be conducted at absolute worst-case conditions, representative worst-case conditions, hypothetical worst-case conditions, or normal conditions as required by paragraph (d)(3)(iii) of this section. Gas stream volumetric flow rates shall be measured at 15-minute intervals. The HAP or TOC concentration shall be determined from samples collected in an integrated sample over the duration of the test, or from grab samples collected simultaneously with the flow rate measurements (every 15 minutes). If an integrated sample is collected for laboratory analysis, the sampling rate shall be adjusted proportionally to reflect variations in flow rate. The absolute worst-case, representative worst-case, or hypothetical worst-case conditions shall be characterized by

the criteria presented in (A), (B), and (C). In all cases, a site-specific plan shall be submitted to the administrator for approval prior to testing in accordance with § 63.7(c). The test plan shall include the emissions profile described in paragraph (b)(7)(iii) of this section.

(A) Absolute worst-case conditions are defined by any of the criteria presented in *(1)* through *(3)*.

(1) The period in which the inlet to the control device will contain at least 50 percent of the maximum HAP load (in lb) capable of being vented to the control device over any 8 hour period. An emission profile as described in paragraph (b)(7)(iii) of this section shall be used to identify the 8-hour period that includes the maximum projected HAP load.

(2) A 1-hour period of time in which the inlet to the control device will contain the highest HAP mass loading rate, in lb/hr, capable of being vented to the control device. An emission profile as described in paragraph (b)(7)(iii) of this section shall be used to identify the 1-hour period of maximum HAP loading.

(3) If a condenser is used as a control device, absolute worst-case conditions shall represent a 1-hour period of time in which the gas stream capable of being vented to the condenser will require the maximum heat removal capacity, in Btu/hr, to cool the stream to a temperature that, upon calculation of HAP concentration, will yield the required removal efficiency for the process.

The calculation of maximum heat load shall be based on the emission profile described in paragraph (b)(7)(iii) of this section and a concentration profile that will allow calculation of sensible and latent heat loads.

(B) Representative worst-case conditions are defined by any of the criteria presented in *(1)* through *(2)*. Representative worst-case conditions shall include the worst-case process as well as any other processes that are emitting to the control device during the test.

(1) A 1-hour period of time that contains the highest HAP mass loading rate, in lb/hr, from a single process;

(2) If a condenser is used as the control device, the 1-hour period of time in which the vent from a single process will require the maximum heat removal capacity, in BTU/hr, to cool the stream to a temperature that, upon calculation of HAP concentration, will yield the required removal efficiency for the process.

(C) Hypothetical worst-case conditions are simulated test conditions that, at a minimum, contain the highest total average hourly HAP load of emissions that would be predicted to be vented to the control device from the emissions profile described in paragraph (b)(7)(iii) of this section.

(iii) For batch operations, the owner or operator may choose to perform tests only during those periods of the worst-case conditions that the owner or operator selects to control as part of achieving the required emission

reduction. The owner or operator must develop an emission profile for the vent to the control device, based on either process knowledge, engineering analyses, or test data collected, to identify the appropriate test conditions. The emission profile must include average HAP loading rate (in lb/hr) versus time for all emission episodes within processes that could contribute to the vent stack for a period of time that is sufficient to include all processes venting to the stack. Examples of information that could constitute process knowledge include calculations based on material balances, and process stoichiometry. Previous test results may be used provided the results are still relevant to the current process vent stream conditions. The average hourly HAP loading rate may be calculated by first dividing the HAP emissions from each episode by the duration of each episode, in hours, and selecting the highest hourly block average.

(iv) For testing of process vents of duration greater than 8 hours, the owner or operator is required to perform a maximum of 8 hours of testing. The test period must include the one hour period in which the highest HAP loading rate, in lb/hr, is predicted by the emission profile.

(v) For testing durations of greater than 1 hour, the emission rate from a single test run may be used to determine compliance. For testing durations less than or equal to 1 hour, testing shall include three 1-hour runs.

(8) For emission streams controlled using condensers, a direct measurement of condenser outlet gas temperature to be used in predicting upper concentration limits at saturated conditions is allowed in lieu of concentration measurements described in paragraph (b)(6) of this section.

(9) Wastewater analysis shall be conducted in accordance with paragraph (b)(9)(i) or (b)(9)(ii) of this section.

(i) Use the equations in paragraphs (b)(9)(i)(A) and (B) of this section to determine the total HAP concentration of a wastewater stream.

(A) The following equation shall be used to calculate the HAP concentration of an individually speciated HAP.

$$C_i = \left(C_c * \frac{MW}{24.055} * \frac{P_i}{760} * \frac{293}{T_i} * t * L * 10^3 \right) / M_s$$

where:

C_i = HAP concentration of the individually-speciated organic HAP in the wastewater, parts per million by weight.

C_c = concentration of the organic HAP (i) in the gas stream, parts per million by volume on a dry basis

M_S = mass of sample, milligrams

MW = molecular weight of the organic HAP (i), grams per gram-mole

24.055 = ideal gas molar volume at 293° Kelvin and 760 millimeters of mercury, liters per gram-mole

P_i = barometric pressure at the time of sample analysis, millimeters mercury absolute

760 = reference or standard pressure, millimeters mercury absolute

293 = reference or standard temperature, °Kelvin

T_i = sample gas temperature at the time of sample analysis, °Kelvin

t = actual purge time minutes

L = actual purge rate liters per minute

10^3 = conversion factor, milligrams per gram

(B) Total HAP concentration can be determined by summing the HAP concentrations of all individually speciated organic HAP in the wastewater.

$$C_{stream} = \sum_{i=1}^{n} C_i$$

where:

C_{stream} = total HAP concentration of wastewater stream

n = number of individual organic HAP (i) in the wastewater stream

C_i = HAP concentration of individual HAP (i) calculated according to the procedures in paragraph (b)(7)(i)(A) of this section

(ii) Use a test method or results from a test method that measures HAP concentrations in the wastewater, and that has been validated according to section 5.1 or 5.3 of Method 301 of 40 CFR part 63 appendix A.

(iii) Use Methods 624, 625, 1624, 1625, and 8270, and the alternative validation procedures presented in § 63.144.

(c) Compliance with storage tank provisions. The owner or operator of an affected storage tank shall demonstrate compliance with §§ 63.1252(b)(2) and 63.1252(b)(3)(i) and (ii), as applicable, by fulfilling the requirements of either paragraph (c)(l) or (c)(2) or (c)(3) of this section.

(1) To demonstrate compliance with the percent reduction requirement of § 63.1252(b)(2) or 63.1252(b)(3)(i) or (ii), the mass rate of total HAP (E_i, E_o) shall be computed.

(i) The following equations shall be used:

$$E_i = K_2 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^{n} C_{oj} M_{oj} \right) Q_o$$

where:

C_{ij}, C_{oj} = concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume

E_i, E_o = mass rate of total HAP at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour

M_{ij}, M_{oj} = molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole

Q_i, Q_o = flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute

K_2 = constant, 2.494×10^{-6} (parts per million)$^{-1}$ (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature is 20°C

(ii) The percent reduction in total HAP shall be calculated as follows:

$$R = \frac{E_i - E_o}{E_i} (100)$$

where:

R = control efficiency of control device, percent

E_i = mass rate of total HAP at the inlet to the control device as calculated under paragraph (c)(l)(i) of this section, kilograms organic HAP per hour

E_o = mass rate of total HAP at the outlet of the control device, as calculated under paragraph (c)(1)(i) of this section, kilograms organic HAP per hour

(iii) A performance test is not required to be conducted if the control device used to comply with § 63.1252(b) (storage tank provisions) is also used to comply with § 63.1252(c) (process vent provisions), and compliance with § 63.1252(c) has been demonstrated in accordance with paragraph (d)(2) of this section.

(2) To demonstrate compliance with the percent reduction requirement of § 63.1252(b)(2) or 63.1252(b)(3)(i) or (ii), a design evaluation shall be prepared. The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during reasonably expected maximum filling rate. This documentation is to include a description of the gas stream which enters the control device, including flow and organic HAP content under varying liquid level conditions, and the information specified in paragraphs (c)(2)(i) through (c)(2)(v) of this section, as applicable.

(i) If the control device receives vapors, gases or liquids, other than fuels, from emission points other than storage vessels subject to this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids, other than fuels, received by the control device.

(ii) If an enclosed combustion device with a minimum residence time of 0.5 seconds and a minimum temperature of 760°C is used to meet the emission reduction requirement specified in § 63.1252(b)(2)(i) [or (ii)], documentation

that those conditions exist is sufficient to meet the requirements of paragraph (c)(2) of this section.

(iii) Except as provided in paragraph (c)(2)(ii) of this section, for thermal incinerators, the design evaluation shall include the autoignition temperature of the organic HAP, the flow rate of the organic HAP emission stream, the combustion temperature, and the residence time at the combustion temperature.

(iv) For carbon adsorbers, the design evaluation shall include the affinity of the organic HAP vapors for carbon, the amount of carbon in each bed, the number of beds, the humidity of the feed gases, the temperature of the feed gases, the flow rate of the organic HAP emission stream, the desorption schedule, the regeneration stream pressure or temperature, and the flow rate of the regeneration stream. For vacuum desorption, pressure drop shall be included.

(v) For condensers, the design evaluation shall include the final temperature of the organic HAP vapors, the type of condenser, and the design flow rate of the organic HAP emission stream.

(3) If the owner or operator of an affected source chooses to comply with the provisions of § 63.1252(b)(2) or 63.1252(b)(3) by installing a floating roof, the owner or operator shall comply with the procedures described in 40 CFR 63.119(b),(c), (d), and 63.120.

(d) Compliance with process vent provisions. An owner or operator of an affected source complying with the process

vent standards in § 63.1252(c) shall demonstrate compliance using the procedures described in paragraphs (d)(1) through (d)(4) of this section.

(1) Except as provided in paragraph (d)(4) of this section, compliance with the process vent standards in § 63.1252(c) shall be demonstrated using the procedures specified in paragraphs (d)(1)(i) through (v), as applicable.

(i) Compliance with § 63.1252(c)(2) is demonstrated when the controlled emissions of HAP from the sum of all process vents within a process that do not meet the criteria specified in § 63.1252(c)(4)(ii) is less than or equal to 2,000 pound per year. Controlled emissions of HAP shall be determined using the procedures described in paragraph (d)(3) of this section.

(ii) Compliance with § 63.1252(c)(3) is demonstrated when the annual uncontrolled HAP emissions from the sum of all process vents within a process that do not meet the criteria specified in § 63.1252(c)(4)(ii) is reduced by 93 percent. This demonstration shall be based on controlled emissions of HAP determined using the procedures described in paragraph (d)(3) of this section and uncontrolled emissions of HAP determined using the procedures described in paragraph (d)(2) of this section or by controlling the process vents using a device meeting the criteria specified in paragraph (d)(4) of this section.

(iii) Compliance with § 63.1252(c)(5) is demonstrated when the annual uncontrolled HAP emissions from all process vents within a process is reduced by 98 percent, or when the sum of uncontrolled HAP emissions of all process vents within a process is less than or equal to 180 kg/yr [400 lb/yr]. This demonstration shall be based on controlled emissions of HAP determined using the procedures described in paragraph (d)(3) of this section and uncontrolled emissions of HAP determined using the procedures described in paragraph (d)(2) of this section or by controlling the process vents using a device meeting the criteria specified in paragraph (d)(4) of this section.

(iv) Compliance with § 63.1252(c)(4) is demonstrated when the annual uncontrolled HAP emissions from each process vent meeting the requirements of § 63.1252(c)(4)(i) is reduced by 98 percent. This demonstration shall be based on controlled emissions of HAP determined using the procedures described in paragraph (d)(3) of this section and uncontrolled emissions of HAP determined using the procedures described in paragraph (d)(2) of this section or by controlling the process vents using a device meeting the criteria specified in paragraph (d)(4) of this section.

(v) Compliance with § 63.1252(c)(4)(ii) is demonstrated when the annual uncontrolled HAP emissions from each process vent meeting the requirements of § 63.1252(c)(4)(ii) is reduced by 93 percent. This demonstration shall be based on controlled emissions of HAP

determined using the procedures described in paragraph (d)(3) of this section and uncontrolled emissions of HAP determined using the procedures described in paragraph (d)(2) of this section or by controlling the process vents using a device meeting the criteria specified in paragraph (d)(4) of this section.

(2) An owner or operator of an affected source complying with the emission limitation required by § 63.1252(c)(2), or emissions reductions specified in § 63.1252(c)(3), (c)(4), or (c)(5) of this subpart for each process vent within a process, shall calculate uncontrolled emissions according to the procedures described in paragraph (d)(2)(i) or (d)(2)(ii), as appropriate.

(i) Owners or operators shall determine uncontrolled emissions of HAP using measurements and/or calculations for each batch emission episode within each unit operation according to the engineering evaluation methodology in paragraphs (d)(2)(i)(A) through (d)(2)(i)(E) of this section. Individual HAP partial pressures in multicomponent systems shall be determined by the following methods: If the components are miscible in one another, use Raoult’s law to calculate the partial pressures; if the solution is a dilute aqueous mixture, use Henry’s law to calculate partial pressures; if Raoult’s law or Henry’s law are not appropriate or available, use experimentally obtained activity coefficients or models such as the group-contribution models, to predict activity coefficients, or

assume the components of the system behave independently and use the summation of all vapor pressures from the HAP as the total HAP partial pressure. Chemical property data can be obtained from standard reference texts.

(A) Emissions from vapor displacement due to transfer of material shall be calculated according to equation (1):

$$E = \frac{(y_i)(V)(P_T)(MW)}{(R)(T)} \qquad (1)$$

where:

E = mass emission rate

y_i = saturated mole fraction of HAP in the vapor phase

V = volume of gas displaced from the vessel

R = ideal gas law constant

T = temperature of the vessel vapor space; absolute

P_T = pressure of the vessel vapor space

MW = molecular weight of the HAP

(B) Emissions from purging shall be calculated using equation (1), except that for purge flow rates greater than 100 standard cubic feet per minute (scfm), the mole fraction of HAP will be assumed to be 25 percent of the saturated value.

(C) Emissions caused by the heating of a vessel shall be calculated using the procedures in either paragraph (C)*(1)*, (C)*(2)*, or (C)*(3)* of this section, as appropriate.

(1) If the final temperature to which the vessel contents is heated is lower than 50° K below the boiling point of the HAP in the vessel, then emissions shall be

calculated using the equations (2) through (5) of this section.

The mass of HAP emitted per episode shall be calculated as follows:

$$E = \frac{\frac{\sum(P_i)_{T1}}{Pa_1} + \frac{\sum(P_i)_{T2}}{Pa_2}}{2} \times \Delta\eta \times MW_{HAP} \qquad (2)$$

where:

E = mass of HAP vapor displaced from the vessel being heated

$(P_i)T_n$ = partial pressure of each HAP in the vessel headspace at initial (n=1) and final (n=2) temperature

Pa_1 = initial gas pressure in the vessel

Pa_2 = final gas pressure

MW_{HAP} = the average molecular weight of HAP present in the vessel

The moles of gas displaced is represented by:

$$\Delta\eta = \frac{V}{R}\left[\left(\frac{Pa_1}{T_1}\right) - \left(\frac{Pa_2}{T_2}\right)\right] \qquad (3)$$

where:

$\Delta\eta$ = number of lb-moles of gas displaced

V = volume of free space in the vessel

R = ideal gas law constant

Pa_1 = initial gas pressure in the vessel

Pa_2 = final gas pressure

T_1 = initial temperature of vessel

T_2 = final temperature of vessel

The initial and final pressure of the noncondensable gas in the vessel shall be calculated according to the following equation:

$$Pa_n = P_{atm} - \Sigma\ (P_i)T_n \qquad (4)$$

where:

Pa_n = partial pressure of gas in the vessel headspace at initial (n=1) and final (n=2) temperature

P_{atm} = atmospheric pressure

$(P_i)T_n$ = partial pressure of each condensable volatile organic compound (including HAP) in the vessel headspace at the initial temperature (n=1) and final (n=2) temperature

The average molecular weight of HAP in the displaced gas shall be calculated as follows:

$$MW_{HAP} = \frac{\sum_{i=1}^{n} (\text{mass of HAP})_i}{\sum_{i=1}^{n} \frac{(\text{mass of HAP})_i}{(\text{HAP molecular weight})_i}} \qquad (5)$$

where n is the number of different HAP compounds in the emission stream.

(2) If the vessel contents are heated to a temperature greater than 50°K below the boiling point, then emissions from the heating of a vessel shall be calculated as the sum

of the emissions calculated in accordance with paragraphs (C)(2)(i) and (C)(2)(ii) of this section.

(i) For the interval from the initial temperature to the temperature 50°K below the boiling point, emissions shall be calculated using Equation 2, where T_2 is the temperature 50°K below the boiling point.

(ii) For the interval from the temperature 50°K below the boiling point to the final temperature, emissions shall be calculated as the summation of emissions for each 5°K increment, where the emission for each increment shall be calculated using Equation 2.

(A) If the final temperature of the heatup is lower than 5°K below the boiling point, the final temperature for the last increment shall be the final temperature of the heatup, even if the last increment is less than 5°K.

(B) If the final temperature of the heatup is higher than 5°K below the boiling point, the final temperature for the last increment shall be the temperature 5°K below the boiling point, even if the last increment is less than 5°K.

(C) If the vessel contents are heated to the boiling point and the vessel is not operating with a process condenser, the final temperature for the final increment shall be the temperature 5°K below the boiling point, even if the last increment is less than 5°K.

(3) If the vessel is operating with a process condenser, and the vessel contents are heated to the boiling point, the primary condenser is considered part of the

process. Emissions shall be calculated as the sum of Equation 2, which calculates emissions due to heating the vessel contents to the temperature of the gas exiting the condenser, and Equation 1, which calculates emissions due to the displacement of the remaining saturated noncondensable gas in the vessel. The final temperature in Equation 2 shall be set equal to the exit gas temperature of the process condenser. In Equation 1, V shall be set equal to the free space volume, and T_2 shall be set equal to the condenser exit gas temperature.

(D) Emissions from depressurization shall be calculated using the procedures in paragraphs (D)(*1*) through (D)(*5*) of this section.

(1) The moles of HAP vapor initially in the vessel are calculated using the ideal gas law as follows:

$$n_{HAP} = \frac{(Y_{HAP})\,(V)\,(P_1)}{R\ T} \qquad (6)$$

where:

Y_{HAP} = mole fraction of HAP (the sum of the individual HAP fractions, ΣY_i)

V = free volume in the vessel being depressurized

P_1 = initial vessel pressure

R = gas constant

T = vessel temperature, absolute units

(2) The moles of noncondensable gas present initially in the vessel are calculated as follows:

$$n_1 = \frac{VP_{nc_1}}{RT} \quad (7)$$

where:

V = free volume in the vessel being depressurized

P_{nc_1} = initial partial pressure of the noncondensable gas, $P_1 - \Sigma P_i$

R = gas law constant, K

T = temperature, absolute units

(3) The moles of noncondensable gas present at the end of depressurization are calculated as follows:

$$n_2 = \frac{V\ P_{NC_2}}{RT} \quad (8)$$

where:

V = free volume in the vessel being depressurized

P_{NC_2} = Final partial pressure of the noncondensable gas, $P_2 - \Sigma\ P_i$

R = gas law constant

T = temperature, absolute

(4) The moles of HAP emitted during the depressurization are calculated by taking an approximation of the average ratio of moles of HAP to moles of noncondensable and multiplying by the total moles of noncondensables released during the depressurization, or:

$$\frac{\left(\frac{n_{HAP}}{n_1} + \frac{n_{HAP}}{n_2}\right)}{2} [n_2 - n_1] = n_{HAP} \quad (9)$$

where:

n_{HAP} = moles of HAP emitted

(5) The moles of HAP emitted can be converted to a mass rate using the following equation:

$$\frac{n_{HAP} * MW_{HAP}}{t} = Er_{HAP} \quad (10)$$

where:

Er_{voc} = emission rate of the HAP

MW_{voc} = molecular weight of the HAP

t = time of the depressurization

(E) Emissions from vacuum systems may be calculated if the air leakage rate is known or can be approximated, using the following equation:

$$E_r = MWs \frac{La}{29} \left(\frac{P_{system}}{P_{system} - P_i*} - 1\right) \quad (11)$$

where:

E_r = rate of HAP emission, in lb/hr

P_{system} = absolute pressure of receiving vessel or ejector outlet conditions, if there is no receiver

P_i* = vapor pressure of the HAP at the receiver temperature, in mmHg

La = total air leak rate in the system, lb/hr

29 = molecular weight of air, lb/lbmole

(ii) For emission episodes in which the owner or operator can demonstrate that the methods in paragraph (d)(2)(i) of this section are not appropriate according to paragraph (d)(2)(iii) of this section, owners and operators shall calculate uncontrolled emissions by conducting an engineering assessment which includes, but is not limited to, the following:

(A) Previous test results provided the tests are representative of current operating practices at the process unit.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Maximum flow rate, HAP emission rate, concentration, or other relevant parameter specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(*1*) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations,

(*2*) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,

(*3*) Estimation of HAP concentrations based on saturation conditions.

(E) All data, assumptions, and procedures used in the engineering assessment shall be documented in accordance with § 63.1255(b). Data or other information supporting a finding that the emissions estimation equations are inappropriate shall be reported in the Notification of Compliance Status.

(iii) The emissions estimation equations in paragraph (d)(2)(i) of this section shall be considered inappropriate for estimating emissions for a given batch emissions episode if one or more of the criteria in paragraphs (d)(2)(iii)(A) and (d)(2)(iii)(B) of this section are met.

(A) Previous test data are available that show a greater than 20 percent discrepancy between the test value and the estimated value.

(B) The owner or operator can demonstrate to the Administrator through any other means that the emissions estimation equations are not appropriate for a given batch emissions episode.

(3) Owners and operators shall determine controlled emissions using measurements and/or calculations for each process vent using the control efficiency calculated from each device that controls process vents with total emissions of less than 10 tons per year, before control, according to

the design evaluation described in paragraph (d)(3)(i) of this section, or using the emission estimation equations described in paragraph (d)(2) of this section, as appropriate. Owners and operators shall determine controlled emissions for each process vent using the control efficiency determined from each device that controls process vents with total emissions of greater than 10 tons per year, before control, by conducting a performance test on the control device as described in paragraphs (d)(3)(ii) through (iv) of this section, or by using the results of a previous performance test as described in paragraph (d)(5) of this section. Owners and operators are not required to conduct performance tests for devices described in paragraphs (d)(4) and (d)(5) of this section that control total emissions of greater than 10 tons per year, before control.

(i) The design evaluation shall include documentation demonstrating that the control device being used achieves the required control efficiency during the emission episodes in which it is functioning in reducing emissions. This documentation is to include a description of the gas stream which enters the control device, including flow and HAP concentration, and the information specified in paragraphs (c)(2)(i) through (c)(2)(v) of this section, as applicable.

(ii) The performance test shall be conducted by performing emission testing on the inlet and outlet of the control device following the test methods and procedures of § 63.1253(b). Concentrations shall be calculated from the

data obtained through emission testing according to the following procedures:

(A) The total HAP concentration (C_{HAP}) is the sum of the concentrations of the individual HAP and shall be computed for each run using the following equation:

$$C_{HAP} = \sum_{i=1}^{x} \frac{\left(\sum_{j=1}^{n} C_{ji}\right)}{x}$$

where:

C_{HAP} = concentration of total HAP, dry basis, parts per million by volume

C_{ji} = concentration of individual HAP j of sample i, dry basis, parts per million by volume

n = number of HAP in the sample

x = number of samples in the sample run

(B) The concentration of total HAP shall be corrected to 3 percent oxygen if a combustion device is the control device. The emission rate correction factor for excess air, based on the integrated sampling and analysis procedures of Method 3B of 40 CFR part 60, appendix A shall be used to determine the oxygen concentration ($\%0_{2d}$). The samples shall be taken during the same time that the total HAP samples are taken. The concentration corrected to 3 percent oxygen (C_c) shall be computed as:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%0_{2d}}\right)$$

where:

C_c = concentration of organic HAP corrected to 3 percent oxygen, dry basis, parts per million by volume

C_m = concentration of organic HAP, dry basis, parts per million by volume

$\%0_{2d}$ = concentration of oxygen, dry basis, percent by volume

(iii) Performance testing shall be conducted under the following conditions:

(A) For all control devices, the owner or operator shall test over absolute or hypothetical worst-case conditions, or over normal conditions, provided the operation of the devices is limited to the conditions that existed during testing. For testing during normal conditions, test conditions and their corresponding operating limits shall be established in the precompliance report and characterized according to stream composition, temperature, and flowrate. The owner or operator must demonstrate in the precompliance report that emission stream conditions entering the control device shall be within the test conditions at all times.

(B) For thermal incinerators, the owner or operator may also choose to test over representative worst-case conditions; however, if the owner or operator chooses to test over representative worst-case conditions, the maximum allowable vent stream flowrate into the thermal incinerator is restricted to the level for which it was designed. The

design basis of the incinerator shall be included as part of the Notification of Compliance Status.

(iv) The owner or operator may elect to conduct more than one performance test on the control device for the purpose of establishing operating conditions associated with a range of achievable control efficiencies.

(4) An owner or operator is not required to conduct a performance test when a control device specified in paragraphs (4)(i) through (4)(iii) of this section is used to comply with the emission reductions required by § 63.1252(c)(4) or (c)(5) of this subpart.

(i) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(ii) A boiler or process heater where the vent stream is introduced with the primary fuel or is used as the primary fuel.

(iii) A boiler or process heater burning hazardous waste for which the owner or operator:

(A) Has been issued a final permit under 40 CFR part 270 and complies with the requirements of 40 CFR part 266, subpart H, or

(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(5) An owner or operator is not required to conduct a performance test for the following:

(i) Any control device for which a previous performance test was conducted, provided the test was

conducted using the same procedures specified in § 63.1253(b) of this subpart over conditions typical of the appropriate worst-case, as defined in paragraph (d)(3)(iii)(A) of this section, or typical of normal operations, as defined in paragraph (d)(3)(iii)(A) of this section and restricted to the conditions described therein. The results of the previous performance test shall be used to demonstrate compliance.

(ii) A condenser system that is equipped with a temperature sensor and recorder, such that the condenser exit gas temperature can be measured at 15-minute intervals when the condenser is functionning in cooling a vent stream. The condenser exit gas temperature shall be used to calculate removal efficiency of the condenser in demonstrating compliance.

(e) Compliance with wastewater provisions.

(1) An owner or operator of a wastewater stream shall comply with paragraphs (1)(i) through (1)(iii) of this section in determining streams that are exempt from the control requirements of § 63.1252(d).

(i) Compliance is demonstrated when the concentration of partially soluble HAP is less than 1,300 ppmw at the POD, or the concentration of total HAP is less than 5,200 ppmw at the POD, as measured or estimated using one of the procedures described in (A) through (C).

(A) The concentration of partially soluble HAP, soluble HAP, or total HAP shall be measured using methods

validated under the procedures described in paragraphs (b)(8)(ii) and (iii) of this section.

(B) The concentration of partially soluble HAP, soluble HAP, or total HAP shall be calculated based on knowledge of the process wastewater. The owner or operator shall provide sufficient information in the to document concentrations. Examples of information that could constitute such knowledge include material balances, records of chemical purchases, process stoichiometry, or previous test results provided the results are still representative of current operating practices at the process unit(s).

(C) The concentration of partially soluble HAP, soluble HAP, or total HAP shall be calculated based on bench scale or pilot-scale test data. The owner or operator shall provide sufficient information to demonstrate that the bench-scale or pilot-scale test concentration data are representative of actual HAP concentrations. The owner or operator shall also provide documentation describing the testing protocol, and the means by which sample variability and analytical variability were accounted for in the determination of HAP concentrations.

(ii) Compliance is demonstrated when the total HAP load calculated by summing the load from all POD’s at a facility is less than 1 Mg/yr. The total wastewater load shall be calculated by converting the concentration of partially soluble HAP, soluble HAP, or total HAP, as appropriate from a concentration (ppmw), to a measure of the

kg of HAP per liter of wastewater. The load shall be calculated by multiplying the kilograms of HAP per liter by the total liters of wastewater per year at the POD. The total liters of wastewater discharged per year shall be demonstrated through the records required by § 63.1255(b) of this subpart.

(iii) Compliance is demonstrated for each stream with a concentration exceeding 1,300 ppmw partially soluble HAP or 5,200 ppmw total HAP at the POD, but less than 10,000 ppmw total HAP at the POD, and the HAP load at the POD or the total HAP load calculated from summing the load from all POD's within a process is less than 1 Mg/yr. Concentrations may be measured or estimated using the procedures described in paragraphs (1)(i)(A) through (C) of this section.

(2) Compliance with the control requirements of § 63.1252(d)(4) is demonstrated through the procedures outlined in § 63.145(b), 63.145(c), 63.145(d), 63.138(j) or 63.145(i) as appropriate.

(3) Compliance with the control device requirements for devices used to comply with the provisions in §§ 63.133 through 63.138 is demonstrated by compliance with the provisions of § 63.139(d).

(4) Compliance with the inspection requirements for vapor collection systems, closed vent systems, fixed roofs, covers, or enclosures is demonstrated by compliance with the provisions of § 63.148.

(5) Compliance with the inspection requirements for wastewater tanks, surface impoundments, containers, individual drain systems, and oil-water separators is demonstrated through the provisions of § 63.143.

(f) Pollution prevention alternative standard. The owner or operator shall demonstrate compliance with § 63.1252(h)(2) of this subpart using the procedures described in paragraph (f)(1) of this section. The owner or operator shall demonstrate compliance with § 63.1252(h)(3) of this subpart using the procedures described in paragraph (f)(2) of this section.

(1) Compliance is demonstrated when the annual kg/kg factor, calculated according to the procedure in (i) and (iii) of this paragraph, is reduced to a value equal to or less than 25 percent of the baseline factor calculated according to the procedure in paragraph (f)(1)(i) and (ii) of this section.

(i) The production-indexed HAP consumption factors shall be calculated by dividing annual consumption of total HAP by the annual production rate, per process. The production-indexed total VOC consumption factor shall be calculated by dividing annual consumption of total VOC by the annual production rate, per process.

(ii) The baseline factor is calculated from yearly production and consumption data for the first 12-month period of time for which data was available, to begin no earlier than January 1, 1987.

(iii) The annual factor is calculated on the following bases:

(A) For continuous processes, the annual factor shall be calculated every 30 days for the 12-month period preceding the 30th day (30-day rolling average).

(B) For batch processes, the annual factor shall be calculated every 10 batches for the 12-month period preceding the 10th batch (10-batch rolling average).

(2) Compliance is demonstrated when the requirements of (i) through (iv) of this paragraph are met.

(i) The annual kg/kg factor, calculated according to the procedure in paragraphs (f)(1)(i) and (f)(1)(iii) of this section, is reduced to a value equal to or less than 50 percent of the baseline factor calculated according to the procedure in paragraphs (f)(1)(i) and (f)(1)(ii) of this section.

(ii) The yearly reduction, in kg HAP/yr, associated with add-on controls that meet the criteria of §§ 63.1252(h)(3)(ii)(A) through (D), is equal to or greater than the mass of HAP calculated by the following equation:

$$[\text{kg/kg}]_b * .25 * [\text{kg produced}]_a = [\text{kg reduced}]_a$$

where:

$[\text{kg/kg}]_b$ = the baseline production-indexed consumption factor, in kg/kg

$[\text{kg produced}]_a$ = the annual production rate, in kg/yr

$[\text{kg reduced}]_a$ = the annual reduction required by add-on controls, in kg/yr

(iii) Demonstration that the criteria in §§ 63.1252(h)(3)(ii)(A) through (D) are met shall be accomplished through a description of the control device and of the material streams entering and exiting the control device.

(iv) The annual reduction achieved by the add-on control shall be quantified using the methods described in § 63.1253(d).

(g) Planned maintenance. The owner or operator shall demonstrate compliance with the requirements of § 63.1252(b), and (c) of this subpart by including in each Periodic Report required by § 63.1256 of this subpart the periods of planned routine maintenance specified by date and time (planned routine maintenance of a control device, during which the control device does not meet the specifications of § 63.1252 of this subpart, as applicable, shall not exceed 240 hours per year).

(h) Compliance with storage tank provisions by using emissions averaging. An owner or operator with two or more affected storage tanks may demonstrate compliance with § 63.1252(b)(2) and § 63.1252(b)(3)(i) and (ii), as applicable, by fulfilling the requirements of paragraphs (h)(1) through (4) or paragraphs (h)(1), (2), (5) and (6) of this section, as appropriate.

(1) The owner or operator shall develop and submit for approval an Implementation Plan containing all the information required in § 63.1255(f) of this subpart 18 months prior to the compliance date of the standard. The Administrator shall have 60 days to approve or disapprove the emissions averaging plan after which time the plan shall be considered approved.

(2) The annual mass rate of total organic HAP (E_{Ti}, E_{To}) shall be calculated for each storage tank included in the emissions average using the requirements specified in either paragraph (c)(1) or (c)(2) or (c)(3) of this section.

(3) The following equations shall be used to calculate total HAP emissions for those tanks subject to § 63.1252(b)(1)(i):

$$E_{Ti} = \sum_{j=1}^{n} E_{ij}$$

$$E_{To} = \sum_{j=1}^{n} E_{oj}$$

where:

E_{ij} = yearly mass rate of total organic HAP at the inlet of the control device for tank j

E_{oj} = yearly mass rate of total organic HAP at the outlet of the control device for tank j

E_{Ti} = total yearly uncontrolled emissions

E_{To} = total yearly controlled emissions

n = number of tanks included in the emissions average

(4) The overall percent reduction efficiency shall be calculated as follows:

$$R = \frac{E_{Ti} - D\,E_{To}}{E_{Ti}}\ (100\%)$$

where:

R = overall percent reduction efficiency.

D = discount factor = 1.1 for all controlled storage tanks.

(5) The following equations shall be used to calculate total HAP emissions for those tanks subject to § 63.1252(b)(1)(ii):

$$E_{Ti} = \sum_{j=1}^{n} E_{ij}$$

$$E_{To} = \sum_{j=1}^{n} E_{oj}$$

where:

E_{ij} = yearly mass rate of total organic HAP at the inlet of the control device for tank j

E_{oj} = yearly mass rate of total organic HAP at the outlet of the control device for tank j

E_{Ti} = total yearly uncontrolled emissions

E_{To} = total yearly controlled emissions

n = number of tanks included in the emissions average

(6) The overall percent reduction efficiency shall be calculated as follows:

$$R = \frac{E_{Ti} - D\ E_{To}}{E_{Ti}}\ (100\%)$$

where:

R = overall percent reduction efficiency

D = discount factor = 1.1 for all controlled storage tanks

(i) Compliance with process vent provisions by using emissions averaging.

An owner or operator with two or more affected processes complying with § 63.1252(c) by using emissions averaging shall demonstrate compliance with paragraphs (i)(1), (2) and (3) of this section.

(1) The owner or operator shall develop and submit for approval an Implementation Plan 18 months prior to the compliance date of the standard containing all the information required in § 63.1255(f) of this subpart. The Administrator shall have 60 days to approve or disapprove the emissions averaging plan. The plan shall be considered approved if the administrator either approves the plan in writing, or fails to disapprove the plan in writing. The 60 day period shall begin when the administrator receives the request. If the request is denied, the owner or operator must still be in compliance with the standard by the compliance date.

(2) Owners or operators shall calculate uncontrolled and controlled emissions of HAP by using the methods specified in paragraph (d)(2) or (d)(3) of this section for each process included in the emissions average.

(i) The following equations shall be used to calculate total HAP emissions:

$$E_{TU} = \sum_{i=1}^{n} E_{Ui}$$

$$E_{TC} = \sum_{i=1}^{n} E_{Ci}$$

where:

E_{Ui} = yearly uncontrolled emissions from process i

E_{Ci} = yearly controlled emissions for process i

E_{TU} = total yearly uncontrolled emissions

E_{TC} = total yearly controlled emissions

n = number of processes included in the emissions average

(3) The overall percent reduction efficiency shall be calculated as follows:

$$R = \frac{E_{TU} - D\ E_{TC}}{E_{TU}}\ (100\%)$$

where:

R = overall percent reduction efficiency

D = discount factor = 1.1 for all controlled emission points

§ 63.1254 Monitoring Requirements

(a) The owner or operator of any existing, new, or reconstructed affected source shall provide evidence of continued compliance with the standard. During the initial compliance demonstration, maximum or minimum operating parameters, as appropriate, shall be established for emission sources that will indicate the source is in compliance. Test data, calculations, or information from the evaluation of the control device design shall be used to establish the operating parameter. If the operating parameter to be established is a maximum and if performance testing has been required, the value of the parameter shall be the average of the maximum values from each of the three test runs. If the operating parameter to be established is a minimum and if performance testing has been required, the value of the parameter shall be the average of the minimum values from each of the three test runs. Parameter values for process vents from batch operations shall be determined as specified in paragraph (b)(1) and (2) of this section. The owner or operator shall operate processes and control devices within these parameters to ensure continued compliance with the standard. Monitoring parameters are specified for continuous process vent control scenarios in paragraphs (a)(1) through (7) of this section.

(1) For all control devices that are used to control process vent streams totaling less than 1 ton/yr HAP emissions, before control, monitoring shall consist of a

periodic verification that the device is operating properly. This verification shall include, but not be limited to, a periodic demonstration that the unit is working as designed. This demonstration shall be included in the precompliance report, to be submitted 12 months prior to the compliance date of the standard.

(2) For affected sources using water scrubbers that are used to control process vent streams totaling greater than 1 ton/yr HAP, before controls, the owner or operator shall establish a minimum scrubber water flow rate as a site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the scrubber water flow rate, averaged over the operating day, is below the minimum value established during the initial compliance demonstration.

(3) For affected sources using condensers that are used to control process vent streams totaling greater than 1 ton/yr, before controls, the owner or operator shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the condenser outlet gas temperature, averaged over the operating day, is greater than the maximum value established during the initial compliance demonstration.

(4) For affected sources using carbon adsorbers that are used to control process vent streams totaling greater than 1 ton/yr, before controls, the owner or operator shall establish a maximum outlet HAP concentration as the site-specific operating parameter which must be measured and recorded every 15 minutes. The affected source will be considered to be out of compliance if the outlet HAP concentration, averaged over the operating day, is greater than the maximum value established during the initial compliance demonstration.

(5) For affected sources using flares that are used to control process vent streams totaling greater than 1 ton/yr, before controls, the presence of the pilot flame shall be monitored every 15 minutes. The affected source will be considered to be out of compliance upon loss of pilot flame.

(6) For each wastewater management unit, treatment process, or control device used to comply with §§ 63.138 and 63.139, the owner or operator shall comply with either paragraph (a)(6)(i) or (a)(6)(ii) of this section.

(i) The owner or operator shall monitor the parameters specified in Tables 11, 12, or 13 of subpart 63.

(ii) The owner or operator shall submit a request for approval to monitor alternative parameters according to the procedures specified in § 63.1256(a)(2)(i).

(7) For affected sources using combustion devices that are used to control process vents totaling greater than 1 ton/yr, before controls, the owner or operator shall

monitor the temperature of the gases exiting the combustion chamber as the site-specific operating parameter which must be measured and recorded every 15 minutes. The affected sources will be considered to be out of compliance if the chamber temperature averaged over the operating day, is greater than the maximum value established during the initial compliance demonstration.

(b) The owner or operator of any existing, new, or reconstructed affected source that chooses to comply with the emission limit or emission reduction requirement for batch process vents and combined streams from process vents and storage tanks shall provide evidence of continued compliance with the standard. As part of the initial compliance demonstrations for batch process vents and storage tanks, test data, compliance calculations, or information from the control device design evaluation shall be used to establish a maximum or minimum level of a relevant operating parameter for each control device that the owner or operator selects to operate as part of achieving the required emission reduction or emission limitation. The owner or operator shall operate processes and control devices within these parameters to ensure continued compliance with the standard.

(1) For devices that are used to control batch process vent streams totaling less than 1 ton/yr HAP emissions, before control, monitoring shall consist of a periodic verification that the device is operating properly. This

verification shall include, but not be limited to, a periodic demonstration that the unit is working as designed. This demonstration shall be included in the precompliance report, to be submitted 12 months prior to the compliance date of the standard.

(2) For batch process vents that are routed to a device that receives HAP in excess of 1 ton per year, before control, the level(s) shall be established in accordance with paragraphs (b)(2)(i) through (iv) of this section.

(i) If more than one batch emission episode or more than one portion of a batch emission episode has been selected to be controlled, a single level for the batch cycle(s) or process(es) shall be calculated from the initial compliance demonstration. The appropriate parameter shall be determined for the worst-case conditions, as determined in § 63.1253(b)(7)(ii) and (b)(7)(iii) selected to be controlled. The average parameter monitoring level for the cycle(s) or process(es) shall be based on the parameter value determined from the worst-case conditions.

(ii) Instead of establishing a single level for the batch cycle(s) or process(es), as described in paragraph (b)(2)(i) of this section, an owner or operator may establish separate levels for each batch emission episode, or portion thereof, selected to be controlled.

(iii) For devices controlling at least 10 tons per year for which a performance test is required, the owner or operator may establish the parametric monitoring level(s)

based on the performance test supplemented by engineering assessments and manufacturer’s recommendations. Performance testing is not required to be conducted over the entire range of expected parameter values. The rationale for the specific level for each parameter, including any data and calculations used to develop the level(s) and a description of why the level indicates proper operation of the control device shall be provided in the Precompliance report. The procedures specified in this section have not been approved by the Administrator and determination of the parametric monitoring level using these procedures is subject to review and approval by the Administrator.

(iv) For devices controlling at least 10 tons per year for which a performance test is conducted at routine conditions, the owner or operator shall establish the parametric monitoring level(s) at conditions of the test. The level(s) established shall be provided in the notification of compliance status report.

(3) If the sum of HAP emissions, before control, routed to the device is greater than 1 tons/yr, the appropriate parameter shall be monitored at 15-minute intervals for the entire period in which the control device is functioning in achieving required removals.

(4) Affected sources with condensers on process vents shall establish the maximum condenser outlet gas temperature as a site-specific operating parameter, which, except as provided in paragraph (b)(3) of this section, must be

measured every 15 minutes or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance if the condenser outlet gas temperature, averaged over the operating day for each process is greater than the value established during the initial compliance demonstration.

(5) For affected sources using water scrubbers, the owner or operator shall establish a minimum scrubber water flow rate as a site-specific operating parameter which, except as provided in paragraph (b)(3) of this section, must be measured and recorded every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance if the scrubber water flow rate, averaged over the operating day for each process, is below the minimum flow rate established during the initial compliance demonstration.

(6) For affected sources using carbon adsorbers or having uncontrolled process vents, the owner or operator shall establish a maximum outlet HAP concentration as the site-specific operating parameter which, except as provided in paragraph (b)(3) of this section, must be measured and recorded every 15 minutes, or at least once for batch emission episodes of duration shorter than 15 minutes. The affected source will be considered to be out of compliance if the outlet HAP concentration, averaged over the operating

day for each process, is greater than the value established during the initial compliance demonstration.

(7) For affected sources using flares, the presence of the pilot flame shall be monitored every 15 minutes, or at least once for batch emission episodes less than 15 minutes in duration. The affected source will be considered to be out of compliance upon loss of pilot flame.

(8) For affected sources using combustion devices, the temperature of the gases exiting the combustion chamber shall be monitored every 15 minutes, or at least once for episodes less than 15 minutes in duration. The affected source will be considered out of compliance if the combustion chamber temperature, averaged over the operating day for each process, is less than the value established during the initial compliance demonstration.

(c) An owner or operator may request approval to monitor parameters other than those required by paragraphs (a)(2) through (7) and paragraphs (b)(5) through (8) of this section. The request shall be submitted according to the procedures specified in § 63.8(f) of subpart A or included in the Precompliance report.

(d) Periods of time when monitoring measurements exceed the parameter values as well as periods of inadequate monitoring data do not constitute a violation if they occur during a startup, shutdown, or malfunction, and the facility follows its startup, shutdown, and malfunction plan.

(e) The owner or operator of any affected source complying with the requirements of appendix GGGA of this section shall meet the monitoring requirements described in the appendix.

(f) The owner or operator of any affected source that chooses to comply with the requirements of §§ 63.1252(h)(2) and (3) shall calculate rolling average values of kg HAP consumption per kg production and kg VOC consumption per kg production. The owner or operator will be considered out of compliance if either rolling average kg/kg factor exceeds the value established in § 63.1253(f)(1)(ii).

(g) Owners or operators of any affected source that chooses to comply with the requirements of § 63.1252(j) shall meet all monitoring requirements specified in § 63.1254(a), (b), (c), and (d), as applicable, for all processes and storage tanks included in the emissions average.

§ 63.1255 Recordkeeping Requirements

(a) The owner or operator of any affected source shall keep records of daily values of equipment operating parameters specified to be monitored under § 63.1254, or specified by the Administrator. Records shall be kept in accordance with the requirements of applicable paragraphs of § 63.10 of subpart A of this part, as specified in the General Provisions applicability table of this subpart. The owner or operator shall keep records up-to-date and readily accessible.

(1) A daily (24-hour) average shall be calculated as the average of all values for a monitored parameter recorded during the operating day.

(2) The operating day shall be the period defined in the operating permit or the Notification of Compliance Status in § 63.9(h). It may be from midnight to midnight or another continuous 24-hour period.

(3) For every operating day in which the daily average value for an operating parameter is outside its established range, the owner or operator must keep records of each parameter value reading taken during the day on which the excursion occurred.

(4) For processes subject to § 63.1252(h), records shall be maintained of rolling average values of kg HAP/kg production and kg VOC/kg production.

(b) The owner or operator of any affected source that complies with the standards for process vents, storage tanks, and wastewater systems shall maintain up-to-date, readily accessible records of the following information to document that HAP emissions or HAP loadings (for wastewater) are below the limits specified in § 63.1252:

(1) The emissions per batch for each process.

(2) The wastewater concentrations per POD and process.

(3) The number of batches per year for each batch process.

(4) The operating hours per year for continuous processes.

(5) The number of tank turnovers per year.

(c) The owner or operator of any affected source implementing the leak detection and repair program specified in appendix GGGA of this section, shall implement the recordkeeping requirements in appendix GGGA of this section. All records shall be retained for a period of 5 years, in accordance with the requirements of 40 CFR 63.10(b)(1).

(d) For unit operations occurring more than once per day, exceedances of established parameter limits shall result in no more than one violation per operating day for each monitored item of equipment utilized in the unit operation.

(e) For certain items of monitored equipment used for more than one type of unit operation in the course of an operating day, exceedances shall result in no more than one violation per operating day, per item of monitored equipment, for each type of unit operation in which the item is in service.

(f) Owners or operators of any affected source that chooses to comply with the requirements of § 63.1252(j) shall maintain up-to-date records of the following information:

(1) An Implementation Plan which shall include in the plan, for all process vents and storage tanks included in each of the averages, the information listed in paragraphs (f)(1)(i) through (f)(1)(v) of this section.

(i) The identification of all process vents and storage tanks in each emissions average.

(ii) The uncontrolled and controlled emissions of HAP and the overall percent reduction efficiency as determined in §§ 63.1253(h)(1) through (6) or §§ 63.1253(i)(1) through (3) as applicable.

(iii) The calculations used to obtain the uncontrolled and controlled HAP emissions and the overall percent reduction efficiency.

(iv) The estimated values for all parameters required to be monitored under § 63.1254(g) for each process and storage tank included in an average. These parameter values, or as appropriate, limited ranges for parameter values, shall be specified as enforceable operating conditions for the operation of the process or storage tank. Changes to the parameters must be reported as required by § 63.1256(d).

(v) A statement that the compliance demonstration, monitoring, inspection, recordkeeping and reporting provisions in §§ 63.1253(h) and (i), § 63.1254(g), and § 63.1256(d) that are applicable to each emission point in the emissions average will be implemented beginning on the date of compliance.

(2) The Implementation Plan must demonstrate that the emissions from the processes and storage tanks proposed to be included in the average will not result in greater hazard or, at the option of the operating permit authority, greater

risk to human health or the environment than if the processes and storage tanks were controlled according to the provisions in § 63.1252(b) or (c).

(i) This demonstration of hazard or risk equivalency shall be made to the satisfaction of the operating permit authority.

(*A*) The Administrator may require owners and operators to use specific methodologies and procedures for making a hazard or risk determination.

(*B*) The demonstration and approval of hazard or risk equivalency shall be made according to any guidance that the Administrator makes available for use or any other technically sound information or methods.

(ii) An emissions averaging plan that does not demonstrate hazard or risk equivalency to the satisfaction of the Administrator shall not be approved. The Administrator may require such adjustments to the emissions averaging plan as are necessary in order to ensure that the average will not result in greater hazard or risk to human health or the environment than would result if the emission points were controlled according to § 63.1252(b) or (c).

(iii) A hazard or risk equivalency demonstration must:

(*A*) be a quantitative, comparative chemical hazard or risk assessment;

(*B*) account for differences between averaging and non-averaging options in chemical hazard or risk to human health or the environment; and

(*C*) meet any requirements set by the Administrator for such demonstrations.

(3) Records as specified in paragraphs (a), (b) and (d) of this section.

(4) A calculation of the overall percent reduction efficiency as specified in § 63.1253(h) and (i) of this subpart for the last quarter and the prior four quarters.

§ 63.1256 Reporting Requirements

(a) The owner or operator of any affected source that elects to comply with the emission limit or emission reduction requirements for process vents, storage tanks, and wastewater systems, shall comply with the reporting requirements of applicable paragraphs of 40 CFR 63.9 and 63.10, as specified in the General Provisions applicability table.

(1) The Notification of Compliance Status report required under § 63.9 shall be submitted within 150 days of the compliance date and shall include:

(i) The results of any applicability determinations, emission calculations, or analyses used to identify and quantify HAP emissions from applicable sources.

(ii) The results of emissions profiles, performance tests, engineering analyses, design evaluations, or calculations used to demonstrate compliance. For performance tests, results should include descriptions of sampling and analysis procedures and quality assurance procedures.

(iii) Descriptions of monitoring devices, monitoring frequencies, and the values of monitored parameters established during the initial compliance determinations, including data and calculations to support the levels established.

(2) The precompliance report shall be submitted 12 months prior to the compliance date of the standard. For new sources, the Precompliance report shall be submitted to the Administrator with the application for approval of construction or reconstruction. The Administrator shall have 60 days to approve or disapprove the plan. The plan shall be considered approved if the administrator either approves the plan in writing, or fails to disapprove the plan in writing. The 60 day period shall begin when the administrator receives the request. If the request is denied, the owner or operator must still be in compliance with the standard by the compliance date. The Precompliance report shall include:

(i) Requests for approval to use alternative monitoring parameters or requests to set monitoring parameters according to § 63.1254(b)(2)(iii).

(ii) Descriptions of how the control devices subject to §§ 63.1254(a)(1) and 63.1254(b)(1) will be checked to verify that they are operating as designed.

(iii) A description of test conditions and limits of operation for control devices tested under normal

conditions, and the corresponding monitoring parameter values.

(b) The owner or operator shall also submit to the Administrator, as part of the quarterly excess emissions and continuous monitoring system performance report and summary report required by 40 CFR 63.10(e)(3), the following recorded information.

(1) Reports of monitoring data, including 15-minute monitoring values as well as daily average values of monitored parameters for all operating days when the average values were outside the ranges established in the Notification of Compliance Status or operating permit.

(2) Reports of the duration of periods when monitoring data is not collected for each excursion caused by insufficient monitoring data. An excursion means any of the two cases listed in paragraphs (b)(2)(i) or (b)(2)(ii) of this section. For a control device where multiple parameters are monitored, if one or more of the parameters meets the excursion criteria in paragraphs (a)(2)(i) or (a)(2)(ii) of this section, this is considered a single excursion for the control device.

(i) When the period of control device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data, as defined in paragraph (b)(2)(iii) of this section, for at least 75 percent of the operating hours.

(ii) When the period of control device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.

(iii) Monitoring data are insufficient to constitute a valid hour of data, as used in paragraphs (b)(2)(i) and (b)(2)(ii) of this section, if measured values are unavailable for any of the 15-minute periods within the hour.

(3) Whenever a process change, as defined in 40 CFR 63.115(e), is made that causes a the emission rate from a de minimis emission point to become a process vent with an emission rate of 1 pound per year or greater, or a change in any of the information submitted in the Notification of Compliance Report, the owner or operator shall submit a report within 180 calendar days after the process change. The report may be submitted as part of the next summary report required under 40 CFR 63.10(e)(3). The report shall include:

(i) A description of the process change.

(ii) The results of the recalculation of the emission rate.

(iii) Revisions to any of the information reported in the original Notification of compliance under § 63.1256(a)(1).

(iv) Information required by the Notification of compliance under § 63.1256(a)(1) for changes involving the addition of processes or equipment.

(c) The owner or operator of any affected source implementing the leak detection and repair program specified in subpart H of this part, shall implement the reporting requirements in 40 CFR 63.182. Copies of all reports shall be retained as records for a period of 5 years, in accordance with the requirements of 40 CFR 63.10(b)(1).

(d) Owners or operators of any affected source that chooses to comply with the requirements of § 63.1252(j) shall submit all information as specified in § 63.1255(f) for each process or storage tank included in the emissions average. The owner or operator shall also submit to the administrator all information as specified in paragraph (b) of this section for each process or storage tank included in the emissions average.

(1) The reports must also include the information listed in paragraphs (c)(1)(i) through (c)(1)(iv) of this section:

(i) Any changes of the processes or storage tanks included in the average.

(ii) The calculation of the overall percent reduction efficiency for the reporting period.

(iii) Changes to the Implementation Plan which affect the calculation methodology of uncontrolled or controlled emissions or the hazard or risk equivalency determination.

(iv) Any changes to the parameters monitored according to § 63.1254(g).

(2) Every 4th quarter report shall include the results according to § 63.1255(f)(4) to demonstrate the emissions averaging provisions of §§ 63.1252(j), 63.1253(h) and (i), 63.1254(g), and 63.1255(f) are satisfied.

§ 63.1257 Delegation of Authority

[Reserved]

TABLE 1. GENERAL PROVISIONS APPLICABILITY TO SUBPART GGG

Reference to subpart A	Applies to subpart GGG	Comment
§ 63.1(a)(1)	Yes	Additional terms defined in § 63.1251
§ 63.1(a)(2)	Yes	
§ 63.1(a)(3)	Yes	
§ 63.1(a)(4)	Yes	Subpart GGG specifies applicability of each paragraph in subpart A to subpart GGG
§ 63.1(a)(5)	N/A	Reserved
§ 63.1(a)(6)	Yes	
§ 63.1(a)(7)	Yes	
§ 63.1(a)(8)	No	Discusses State programs
§ 63.1(a)(9)	N/A	Reserved
§ 63.1(a)(10)	Yes	
§ 63.1(a)(11)	Yes	
§ 63.1(a)(12)-(14)	Yes	
§ 63.1(b)(1)	No	§ 63.1250 of subpart GGG specifies applicability
§ 63.1(b)(2)	Yes	
§ 63.1(b)(3)	Yes	
§ 63.1(c)(1)	Yes	Subpart GGG specifies applicability of each paragraph in subpart A to sources subject to subpart GGG
§ 63.1(c)(2)	No	Area sources are not subject to subpart GGG
§ 63.1(c)(3)	N/A	Reserved
§ 63.1(c)(4)	Yes	
§ 63.1(c)(5)	Yes	
§ 63.1(d)	N/A	Reserved
§ 63.1(e)	Yes	
§ 63.2	Yes	Additional terms are defined in § 63.1251 of subpart GGG; when overlap between subparts A and GGG occurs, subpart GGG takes precedence
§ 63.3	Yes	Other units used in subpart GGG are defined in that subpart
§ 63.4(a)(1)-(3)	Yes	
§ 63.4(a)(4)	N/A	Reserved
§ 63.4(a)(5)	Yes	
§ 63.4(b)	Yes	
§ 63.4(c)	Yes	
§ 63.5(a)	Yes	Except replace the terms "source" and "stationary source" in § 63.5(a)(1) of subpart A with "affected source"
§ 63.5(b)(1)	Yes	
§ 63.5(b)(2)	N/A	Reserved
§ 63.5(b)(3)	Yes	
§ 63.5(b)(4)	Yes	

TABLE 1. (continued)

Reference to subpart A	Applies to subpart GGG	Comment
§ 63.5(b)(5)	Yes	
§ 63.5(b)(6)	Yes	
§ 63.5(c)	N/A	Reserved
§ 63.5(d)(1)(i)	Yes	
§ 63.5(d)(1)(ii)	Yes	
§ 63.5(d)(1)(iii)	Yes	
§ 63.5(d)(2)	Yes	
§ 63.5(d)(3)-(4)	Yes	
§ 63.5(e)	Yes	
§ 63.5(f)(1)	Yes	Except replace "source" in § 63.5(f)(1) of subpart A with "affected source"
§ 63.5(f)(2)	Yes	
§ 63.6(a)	Yes	
§ 63.6(b)(1)-(2)	No	Subpart GGG specifies compliance dates
§ 63.6(b)(3)-(4)	Yes	
§ 63.6(b)(5)	Yes	
§ 63.6(b)(6)	N/A	Reserved
§ 63.6(b)(7)	Yes	
§ 63.6(c)(1)-(2)	Yes	Except replace "source" in § 63.6(c)(1)-(2) of subpart A with "affected source"
§ 63.6(c)(3)-(4)	N/A	Reserved
§ 63.6(c)(5)	Yes	
§ 63.6(d)	N/A	Reserved
§ 63.6(e)	Yes	
§ 63.6(f)(1)	Yes	
§ 63.6(f)(2)(i)-(ii)	Yes	
§ 63.6(f)(2)(iii)	Yes	
§ 63.6(f)(2)(iv)	Yes	
§ 63.6(f)(3)	Yes	
§ 63.6(g)	Yes	An alternative standard has been proposed; however, affected sources will have the opportunity to demonstrate other alternatives to the Administrator
§ 63.6(h)	No	Subpart GGG does not contain any opacity or visible emissions standards
§ 63.6(i)(1)	Yes	

TABLE 1. (continued)

Reference to subpart A	Applies to subpart GGG	Comment
§ 63.6(i)(2)	Yes	Except replace "source" in § 63.6(2)(i) and (ii) of subpart A with "affected source."
§ 63.6(i)(3)	Yes	
§ 63.6(i)(4) (i)	Yes	
§ 63.6(i)(4) (ii)	Yes	
§ 63.6(i)(5)-(14)	Yes	
§ 63.6(i)(15)	N/A	Reserved
§ 63.6(i)(16)	Yes	
§ 63.6(j)	Yes	
§ 63.7(a)(1)	Yes	Subpart GGG specifies required testing and compliance procedures
§ 63.7(a)(2) (i)-(vi)	Yes	
§ 63.7(a)(2) (vii)-(viii)	N/A	Reserved
§ 63.7(a)(2) (ix)	Yes	
§ 63.7(a)(3)	Yes	
§ 63.7(b)(1)	Yes	
§ 63.7(b)(2)	Yes	
§ 63.7(c)	Yes	
§ 63.7(d)	Yes	Except replace "source" in § 63.7(d) of subpart A with "affected source."
§ 63.7(e)(1)	Yes	Subpart GGG also contains test methods specific to pharmaceutical sources.
§ 63.7(e)(2)	Yes	
§ 63.7(e)(3)	Yes	Subpart GGG specifies test methods and procedures
§ 63.7(f)	Yes	
§ 63.7(g)(1)	Yes	
§ 63.7(g)(2)	N/A	Reserved
§ 63.7(g)(3)	Yes	
§ 63.7(h)(1)-(2)	Yes	
§ 63.7(h)(3) (i)	Yes	
§ 63.7(h)(3) (ii)-(iii)	Yes	
§ 63.7(h)(4)-(5)	Yes	
§ 63.8(a)(1)	Yes	
§ 63.8(a)(2)	Yes	

TABLE 1. (continued)

Reference to subpart A	Applies to subpart GGG	Comment
§ 63.8(a)(3)	N/A	Reserved
§ 63.8(a)(4)	Yes	
§ 63.8(b)(1)	Yes	
§ 63.8(b)(2)	No	Subpart GGG has CMS requirements
§ 63.8(b)(3)	Yes	
§ 63.8(c)(1) (i)	Yes	
§ 63.8(c)(1) (ii)	Yes	
§ 63.8(c)(1) (iii)	Yes	
§ 63.8(c)(2)-(3)	Yes	
§ 63.8(c)(4)-(8)	No	Subpart GGG specifies monitoring frequencies
§ 63.8(d)	Yes	
§ 63.8(e)	Yes	
§ 63.8(f)(1)	Yes	
§ 63.8(f)(2)	Yes	
§ 63.8(f)(3)	Yes	
§ 63.8(f)(4)	Yes	
§ 63.8(f)(5)	Yes	
§ 63.8(f)(6)	Yes	
§ 63.8(g)	Yes	
§ 63.9(a)	Yes	
§ 63.9(b)(1) (i)-(ii)	Yes	
§ 63.9(b)(1) (iii)	Yes	
§ 63.9(b)(2)	Yes	
§ 63.9(b)(3)	Yes	
§ 63.9(b)(4)	Yes	
§ 63.9(b)(5)	Yes	
§ 63.9(c)	Yes	
§ 63.9(d)	Yes	
§ 63.9(e)	No	
§ 63.9(f)	No	
§ 63.9(g)	No	
§ 63.9(h)(1)-(3)	Yes	
§ 63.9(h)(4)	N/A	Reserved
§ 63.9(h)(5)-(6)	Yes	
§ 63.9(i)	Yes	

TABLE 1. (continued)

Reference to subpart A	Applies to subpart GGG	Comment
§ 63.9(j)	Yes	
§ 63.10(a)	Yes	
§ 63.10(b)(1)	Yes	
§ 63.10(b)(2)	No	Subpart GGG specifies recordkeeping requirements
§ 63.10(b)(3)	Yes	
§ 63.10(c)(1)-(6)	Yes	
§ 63.10(c)(7)-(8)	Yes	
§ 63.10(c)(9)-(15)	Yes	
§ 63.10(d)(1)	Yes	Subpart GGG specifies performance test reporting requirements
§ 63.10(d)(2)	Yes	Subpart GGG specifies performance test reporting requirements
§ 63.10(d)(3)	No	
§ 63.10(d)(4)	Yes	
§ 63.10(d)(5)	Yes	
§ 63.10(e)(1)-(2)	Yes	
§ 63.10(e)(3)	Yes	
§ 63.10(e)(4)	Yes	
§ 63.10(f)	Yes	
§ 63.11-§ 63.15	Yes	

TABLE 2. PARTIALLY SOLUBLE HAP

Compound
1,1,1-Trichloroethane (methyl chloroform)
1,1,2,2-Tetrachloroethane
1,1,2-Trichloroethane
1,1-Dichloroethylene (vinylidene chloride)
1,2-Dibromoethane
1,2-Dichloroethane (ethylene dichloride)
1,2-Dichloropropane
1,3-Dichloropropene
2,4,5-Trichlorophenol
2-Butanone (mek)
2-Nitropropane
4-Methyl-2-pentanone (mibk)
Acetaldehyde
Acrolein
Acrylonitrile
Allyl chloride
Benzene
Benzyl chloride
Biphenyl
Bromoform (tribromomethane)
Bromomethane
Butadiene
Carbon disulfide
Chlorobenzene
Chloroethane (ethyl chloride)
Chloroform
Chloromethane
Chloroprene
Cumene
Dichloroethyl ether
Dinitrophenol
Ethyl acrylate
Ethylbenzene
Ethylene oxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachloroethane
Methyl methacrylate
Methyl-t-butyl ether
Methylene chloride
N,N-dimethylaniline

TABLE 2. (continued)

Compound
Naphthalene
Phosgene
Propionaldehyde
Propylene oxide
Styrene
Tetrachloroethene (perchloroethylene)
Tetrachloromethane (carbon tetrachloride
Toluene
Trichlorobenzene (1,2,4-)
Trichloroethylene
Triethylamine
Trimethylpentane
Vinyl acetate
Vinyl chloride
Xylene (m)
Xylene (o)
Xylene(p)
N-hexane
P-dichlorobenzene

TABLE 3. SOLUBLE HAP's

Compound
1,1-Dimethylhydrazine
1,4-Dioxane
Acetonitrile
Acetophenone
Diethyl sulfate
Dimethyl sulfate
Dinitrotoluene
Epichlorohydrin
Ethylene glycol dimethyl ether
Ethylene glycol monobutyl ether acetate
Ethylene glycol monomethyl ether acetate
Isophorone
Methanol (methyl alcohol)
Nitrobenzene
Toluidene

APPENDIX A

§ GGGA-1 General Equipment Leak Requirements

(a) The provisions of this appendix apply to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems required by this subpart that are intended to operate in organic hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of this subpart.

(b) After the compliance date for a process, equipment to which this subpart applies that are also subject to the provisions of:

(1) 40 CFR part 60 will be required to comply only with the provisions of this subpart.

(2) 40 CFR part 61 will be required to comply only with the provisions of this subpart.

(c) [Reserved]

(d) The provisions in § 63.1(a)(3) of subpart A of this part do not alter the provisions in paragraph (b) of this section.

(e) Lines and equipment not containing process fluids are not subject to the provisions of this appendix. Utilities, and other nonprocess lines, such as heating and cooling systems which do not combine their materials with those in the processes they serve, are not considered to be part of a process.

(f) The provisions of this appendix do not apply to bench-scale processes, regardless of whether the processes are located at the same plant site as a process subject to the provisions of this subpart.

(g) Each piece of equipment to which this appendix applies shall be identified such that it can be distinguished readily from equipment that is not subject to this appendix. Identification of the equipment does not require physical tagging of the equipment. For example, the equipment may be identified on a plant site plan, in log entries, or by designation of process boundaries by some form of weatherproof identification. If changes are made to the affected source subject to the leak detection require-ments, equipment identification for each type of component shall be updated, if needed, within 15 calendar days of the end of each monitoring period for that component.

(h) Equipment that is in vacuum service is excluded from the requirements of this appendix.

(i) Equipment that is in organic HAP service, but is in such service less than 300 hours per calendar year, is excluded from the requirements of this appendix if it is identified as required in § GGGA-8(j) of this appendix.

(j) When each leak is detected by visual, audible, or olfactory means, or by monitoring as described in § 63.180(b) or(c), the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve or connector in light liquid or gas/vapor service may be removed after it has been monitored as specified in § GGGA-6(f)(3), § 63.174(e), and § 63.175(e)(7)(i)(D), and no leak has been detected during the follow-up monitoring.

(3) The identification on equipment, except on a valve or connector in light liquid or gas/vapor service, may be removed after it has been repaired.

§ GGGA-2 Definitions

Bench-scale batch process means a batch process (other than a research and development facility) that is capable of being located on a laboratory bench top. This bench-scale equipment will typically include reagent feed vessels, a small reactor and associated product separator, recovery and holding equipment. These processes are only capable of producing small quantities of product.

Closed-loop system means an enclosed system that returns process fluid to the process and is not vented to the atmosphere except through a closed-vent system.

Closed-purge system means a system or combination of system and portable containers, to capture purged liquids. Containers must be covered or closed when not being filled or emptied.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation. For the purpose of reporting and recordkeeping, connector means joined fittings that are not inaccessible, ceramic, or ceramic-lined as described in § GGGA-3(a)(7) and § GGGA-7(c).

Control device, for purposes of this appendix, means any equipment used for recovering or oxidizing organic hazardous air pollutant vapors. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, flares, boilers, and process heaters.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment, for purposes of this appendix, means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, surge control vessel, bottoms receiver, and instrumentation system in organic hazardous air pollutant

service; and any control devices or closed-vent systems required by this subpart.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere.

Flow indicator means a device which indicates whether gas flow is, or whether the valve position would allow gas flow to be present, in a line.

In gas/vapor service means that a piece of equipment in organic hazardous air pollutant service contains a gas or vapor at operating conditions.

In heavy liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service or in light liquid service.

In light liquid service means that a piece of equipment in organic hazardous air pollutant service contains a liquid that meets the following conditions:

1. The vapor pressure of one or more of the organic compounds is greater than 0.3 kilopascals at 20°C;

2. The total concentration of the pure organic compounds constituents having a vapor pressure greater than 0.3 kilopascals at 20°C is equal to or greater than 20 percent by weight of the total process stream; and

3. The fluid is a liquid at operating conditions.

(Note: Vapor pressures may be determined by the methods described in 40 CFR 60.485(e)(1).)

In liquid service means that a piece of equipment in organic hazardous air pollutant service is not in gas/vapor service.

In organic hazardous air pollutant or in organic HAP service means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP's as determined according to the provisions of § 63.180(d). The provisions of § 63.180(d) also specify how to determine that a piece of equipment is not in organic HAP service.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

In-situ sampling systems means nonextractive samplers or in-line samplers.

Initial startup means the first time a new or reconstructed source begins production. Initial startup does not include operation solely for testing equipment. Initial startup does not include subsequent start ups (as defined in this section) of processes following malfunctions or process shutdowns.

Instrumentation system means a group of equipment components used to condition and convey a sample of the process fluid to analyzers and instruments for the purpose of determining process operating conditions (e.g., composition, pressure, flow, etc.). Valves and connectors are the predominant type of equipment used in

instrumentation systems; however, other types of equipment may also be included in these systems. Only valves nominally 0.5 inches and smaller, and connectors nominally 0.75 inches and smaller in diameter are considered instrumentation systems for the purposes of this subpart. Valves greater than nominally 0.5 inches and connectors greater than nominally 0.75 inches associated with instrumentation systems are not considered part of instrumentation systems and must be monitored individually.

Liquids dripping means any visible leakage from the seal including dripping, spraying, misting, clouding, and ice formation. Indications of liquid dripping include puddling or new stains that are indicative of an existing evaporated drip.

Nonrepairable means that it is technically infeasible to repair a piece of equipment from which a leak has been detected without a process shutdown.

Open-ended valve or line means any valve, except pressure relief valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Pressure release means the emission of materials resulting from the system pressure being greater than the set pressure of the pressure relief device. This release can be one release or a series of releases over a short time period due to a malfunction in the process.

Pressure relief device or valve means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is a spring-loaded pressure relief valve. Devices that are actuated either by a pressure of less than or equal to 2.5 psig or by a vacuum are not pressure relief devices.

Process shutdown means a work practice or operational procedure that stops production from a process or part of a process during which it is technically feasible to clear process material from a process or part of a process consistent with safety constraints and during which repairs can be effected. An unscheduled work practice or operational procedure that stops production from a process or part of a process for less than 24 hours is not a process shutdown. An unscheduled work practice or operational procedure that would stop production from a process or part of a process for a shorter period of time than would be required to clear the process or part of the process of materials and start up the process, and would result in greater emissions than delay of repair of leaking components until the next scheduled process shutdown, is not a process

shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process shutdowns.

Repaired means that equipment is adjusted, or otherwise altered, to eliminate a leak as defined in the applicable sections of this appendix.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity, such as temperature, pressure, flow rate, pH, or liquid level.

Set pressure means the pressure at which a properly operating pressure relief device begins to open to relieve atypical process system operating pressure.

Startup means the setting in operation of a piece of equipment or a control device that is subject to this subpart.

§ GGGA-3 References

(a) The owner or operator of a source subject to this appendix shall comply with the following sections of subpart H, except that references to § 63.160 and § 63.162 shall mean § GGGA-1 of this appendix; references to § 63.161 shall mean § GGGA-2 of this appendix; references to § 63.163 and § 63.173 shall mean § GGGA-4 of this appendix;

references to § 63.167 shall mean § GGGA-5 of this appendix; references to § 63.168 shall mean § GGGA-6 of this appendix; references to § 63.170 shall be included in the requirements set forth in § 63.1252(c); references to § 63.171 shall mean § GGGA-3(a)(5) of this appendix; references to § 63.172 shall mean § GGGA-3(a)(6) of this appendix; references to § 63.181 shall mean § GGGA-8 of this appendix; and references to § 63.182 shall mean § GGGA-9 of this appendix. The term "process unit" as used in subpart H shall be considered to be defined the same as "process" for sources subject to this subpart GGG:

(1) § 63.164, Compressors;

(2) § 63.165, Pressure relief devices in gas/vapor service;

(3) § 63.166, Sampling connection systems;

(4) § 63.169, Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service;

(5) § 63.171, Delay of repair, except

Section 63.171(a) shall be changed to read: Delay of repair of equipment for which leaks have been detected is allowed if one of the following conditions exist:

(i) § 63.171(a)(1) is added to read: The repair is technically infeasible without a process shutdown. Repair of this equipment shall occur by the end of the next scheduled process shutdown.

(ii) § 63.171(a)(2) is added to read: The owner or operator determines that repair personnel would be exposed to an immediate danger if attempting to repair without a process shutdown. Repair of this equipment shall occur by the end of the next scheduled process shutdown.

(6) §63.172, Closed-vent systems and control devices, for closed-vent systems used to comply with this subpart, and for control devices used to comply with this appendix only, except

(i) § 63.172(k) and (l) shall not apply. Instead, references to these paragraphs shall mean § GGGA-7.

(ii) Owners or operators may, instead of complying with the provisions of § 63.172(f), design a closed-vent system to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gage or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the associated control device is operating.

(7) § 63.174, Connectors, except

(i) § 63.174(f) and (g) shall not apply. Instead, references to these paragraphs shall mean § GGGA-7.

(ii) Days that the connector are not in organic HAP service shall not be considered part of the 3 month period in § 63.174(e).

(8) § 63.175, Quality improvement program for valves, except

(i) § 63.175(a) is changed to read: An owner or operator may elect to comply with one of the alternative quality improvement programs specified in paragraphs (d) and (e) of this section. The decision to use one of these alternative provisions to comply with the requirements of § 63.168(d)(1)(ii) of this subpart must be made during the second year of compliance for existing and new processes.

(ii) The "start of Phase III" shall mean the "compliance date" as specified in §63.1250. The phrase "of Phase III" shall mean "after the compliance date" as specified in § 63.1250.

(9) § 63.176, Quality improvement program for pumps, except

(i) § 63.176(a) is changed to read: If, on a 1-year rolling average, the greater of either 10 percent of the pumps in a process (or affected source) or three pumps in a process (or affected source) leak, the owner or operator may elect to comply with the requirements of this section as specified. The decision to use this provision to comply with the requirements of § 63.163(d)(2) of this subpart must be made during the second year of compliance for existing and new processes.

(ii) § 63.176(a)(1) and (2), and (d)(8) shall not apply.

(10) § 63.177, Alternative means of emission limitation: General;

(11) § 63.178, Alternative means of emission limitation: Batch processes;

(12) § 63.179, Alternative means of emission limitation: Enclosed-vented process units;

(13) § 63.180, Test methods and procedures, except

§ 63.180(b)(4)(ii)(A - C) are replaced by (b)(4)(ii) that reads: A mixture of methane and air at concentration of approximately, but less than, 10,000 parts per million methane for agitators; 2,000 parts per million for pumps; and 500 parts per million for all other equipment, except as provided in paragraph (b)(4)(iii) of this section.

GGGA-4 Standards: Pumps in Light Liquid Service and Agitators in Gas/Vapor Service and in Light Liquid Service.

(a) The provisions of this section apply to each pump that is in light organic HAP liquid service, and to each agitator in organic HAP gas/vapor service or in light organic HAP liquid service.

(b)(1) Each pump and agitator subject to this section shall be monitored quarterly to detect leaks by the method specified in § 63.180(b) of this subpart, except as provided in § 63.177, § GGGA-7, and paragraphs (e) through (i) of this section.

(2) The instrument reading, as determined by the method as specified in § 63.180(b), that defines a leak is:

(i) For agitators, an instrument reading of 10,000 parts per million or greater.

(ii) For pumps, an instrument reading of 2,000 parts per million or greater.

(3) Each pump and agitator shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump or agitator seal. If there are indications of liquids dripping from the seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in paragraph (c)(3) of this section or § GGGA-3(a)(5) of this appendix.

(2) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable:

(i) Tightening of packing gland nuts.

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(d) For pumps:

(1) The owner or operator shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process basis or on an affected source-wide basis. Once the owner or operator has decided, all subsequent percent calculations shall be made on the same basis.

(2) If, calculated on a 1-year rolling average, the greater of either 10 percent of the pumps in a process or

three pumps in a process leak, the owner or operator shall either:

(i) Monitor each pump once per month; or

(ii) Implement a quality improvement program for pumps that complies with the requirements of § 63.176 and monitor quarterly.

(3) The number of pumps at a process shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process within 1 quarter after startup of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.

(4) Percent leaking pumps shall be determined by the following equation:

$$\%P_L = [(P_L - P_S)/(P_T - P_S)] \times 100$$

where:

$\%P_L$ = Percent leaking pumps

P_L = Number of pumps found leaking as determined through quarterly monitoring as required in paragraphs (b)(1) and (b)(2) of this section.

P_T = Total pumps in organic HAP service, including those meeting the criteria in paragraphs (e) and (f) of this section.

P_S = Number of pumps leaking within 1 quarter of startup during the current monitoring period.

(e) Each pump or agitator equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs (a) through

(d) of this section, provided the following requirements are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump/agitator stuffing box pressure; or

(ii) Equipped with a barrier fluid degassing reservoir that is connected by a closed-vent system to a control device that complies with the requirements of § GGGA-3(a)(6); or

(iii) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(2) The barrier fluid is not in light liquid service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump/agitator is checked by visual inspection each calendar week for indications of liquids dripping from the pump/agitator seal.

(i) If there are indications of liquids dripping from the pump/agitator seal at the time of the weekly inspection, the pump/agitator shall be monitored as specified in § 63.180(b) to determine if there is a leak of organic HAP in the barrier fluid.

(ii) If an instrument reading of 2,000 parts per million or greater is measured for pumps, or 10,000 parts

per million or greater is measured for agitators, a leak is detected.

(5) Each sensor as described in paragraph (e)(3) of this section is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.

(6)(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both.

(ii) If indications of liquids dripping from the pump/agitator seal exceed the criteria established in paragraph (e)(6)(i) of this section, or if, based on the criteria established in paragraph (e)(6)(i) of this section, the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § GGGA-3(a)(5) of this appendix.

(iv) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(f) Any pump/agitator that is designed with no externally actuated shaft penetrating the pump/agitator housing is exempt from the requirements of paragraphs (a) through (c) of this section.

(g) Any pump/agitator equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals back to the process or to a control device that complies with the requirements of § GGGA-3(a)(6) is exempt from the requirements of paragraphs (b) through (e) of this section.

(h) Any pump/agitator that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(3) and (e)(4) of this section, and the daily requirements of paragraph (e)(5) of this section, provided that each pump/agitator is visually inspected as often as practicable and at least monthly.

(i) If more than 90 percent of the pumps at a process meet the criteria in either paragraph (e) or (f) of this section, the process is exempt from the requirements of paragraph (d) of this section.

§ GGGA-5 Standards: Open-Ended Valves or Lines

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 63.177 and paragraph (d) of this section.

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line, or during maintenance or repair. The cap, blind flange, plug, or second valve shall be in place within 1 hour of cessation of operations requiring process fluid

flow through the open-ended valve or line, or within 1 hour of cessation of maintenance or repair.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or, would prevent an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraph (a) through (c) of this section.

§ GGGA-6 Standards: Valves in Gas/Vapor Service and in Light Liquid Service

(a) The provisions of this section apply to valves that are either in gas organic HAP service or in light liquid organic HAP service.

(1) For existing and new affected sources, all valves subject to the this section shall be monitored, except as provided in § 63.177 and § GGGA-7, by no later than 1 year after the compliance date.

(b) The owner or operator of a source subject to this appendix shall monitor all valves, except as provided in § 63.177 and § GGGA-7, at the intervals specified in paragraph (d) of this section and shall comply with all other provisions of this section, except as provided in § GGGA-3(a)(5), § 63.178, and § 63.179.

(1) The valves shall be monitored to detect leaks by the method specified in § 63.180(b).

(2) An instrument reading of 500 parts per million or greater defines a leak.

(c) [Reserved]

(d) After conducting the initial survey required in paragraph (a)(1) of this section, the owner or operator shall monitor valves for leaks at the intervals specified below:

(1) At processes with 2 percent or greater leaking valves, calculated according to paragraph (e) of this section, the owner or operator shall either:

(i) Monitor each valve once per month; or

(ii) Implement a quality improvement program for valves that complies with the requirements of § 63.175(d) or (e) and monitor quarterly.

(2) At processes with less than 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (d)(3) and (d)(4) of this section.

(3) At processes with less than 1 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 quarters.

(4) At processes with less than 0.5 percent leaking valves, the owner or operator may elect to monitor each valve once every 4 quarters.

(e)(1) Percent leaking valves at a process shall be determined by the following equation:

$$\%V_L = [V_L/(V_T + V_C)] \times 100$$

where:

$\%V_L$ = Percent leaking valves.

V_L = Number of valves found leaking excluding nonrepairables as provided in paragraph (e)(3)(i) of this section.

V_T = Total valves monitored, in a monitoring period excluding valves monitored as required by (f)(3) of this section.

V_C = Optional credit for removed valves = 0.67 x net number (i.e., total removed-total added) of valves in organic HAP service removed from process after the effective date for existing processes, and after the date of initial startup for new sources. If credits are not taken, then $V_C = 0$.

(2) For use in determining monitoring frequency, as specified in paragraph (d) of this section, the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs.

(3)(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with paragraph (e)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves.

(f)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § GGGA-3(a)(5) of this appendix.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(3) When a leak is repaired, the valve shall be monitored at least once within the first 3 months after its repair. Days that the valve are not in organic HAP service shall not be considered part of this 3 month period.

(g) First attempts at repair include, but are not limited to, the following practices where practicable:

(1) Tightening of bonnet bolts,

(2) Replacement of bonnet bolts,

(3) Tightening of packing gland nuts, and

(4) Injection of lubricant into lubricated packing.

(h) Any equipment located at a plant site with fewer than 250 valves in organic HAP service in the affected source is exempt from the requirements for monthly monitoring and a quality improvement program specified in paragraph (d)(1) of this section. Instead, the owner or operator shall monitor each valve in organic HAP service for leaks once each quarter, or comply with paragraphs (d)(3) or (d)(4) of this section.

§ GGGA-7 Unsafe to Monitor, Difficult to Monitor, and Inaccessible Equipment

(a) Equipment subject to this appendix shall not be required to comply with the monitoring requirements of this appendix if it meets the definition of difficult to monitor or unsafe to monitor as specified in paragraphs (b) or (c) of this section. Agitators and connectors will also be

subject to the inaccessible to monitor requirements in paragraph (d) of this section. Specific paragraphs that will no longer apply to such equipment are as follows:

(1) For pumps and agitators, §§ GGGA-4(b), (c), and (d) shall not apply.

(2) For valves, § GGGA-6(b), (c), (d), (e), and (f) shall not apply.

(3) For closed-vent systems, § 63.172(f)(1) and (2), and (g) shall not apply.

(4) For connectors, § 63.174(b), (c), (d), and (e) shall not apply.

(b) Equipment that is designated, as described in § GGGA-8(b)(7) of this appendix, as unsafe-to-monitor is subject to the exemptions of paragraph (a) of this section if:

(1) The owner or operator of the equipment determines that it is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with the paragraphs referenced in (a)(1) through (4) of this section.

(2) The owner or operator has a written plan that requires monitoring of the equipment as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable.

(c) Equipment that is designated, as described in § GGG-8(b)(7) of this appendix, as difficult to monitor is

subject to the exemptions of paragraph (a) of this section if:

(1) The owner or operator of the equipment determines that the equipment cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner;

(2) The process unit within which the equipment is located is an existing source or the owner or operator designates less than 3 percent of the total number of valves in a new source as difficult to monitor; and

(3) The owner or operator of the equipment follows a written plan that requires monitoring of the equipment at least once per calendar year.

(d) Agitators and connectors designated as inaccessible are subject to the exemptions of paragraph (a) of this section if:

(1) The equipment is inaccessible because it is:

(i) Buried;

(ii) Insulated in a manner that prevents access to the equipment by a monitor probe;

(iii) Obstructed by equipment or piping that prevents access to the equipment by a monitor probe;

(iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to equipment up to 7.6 meters (25 feet) above the ground;

(v) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but

is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

(2) For pumps, agitators, and valves, the process within which the equipment is located is an existing source or the owner or operator designates less than 3 percent of the total number of components of that type (e.g., pumps, agitators, or valves) in a new source as inaccessible; and

(3) If any inaccessible equipment is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § GGGA-8 of this appendix.

§ GGGA-8 Recordkeeping Requirements

(a) An owner or operator of more than one process subject to the provisions of this appendix may comply with the recordkeeping requirements for these processes in one recordkeeping system if the system identifies with each record the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site.

(b) Except as provided in paragraph (e) of this section and in paragraph GGGA-1(i), the following information pertaining to all equipment subject to the requirements in this appendix shall be recorded:

(1)(i) A list of identification numbers for equipment (except connectors exempt from monitoring and recordkeeping identified in § 63.174 and instrumentation systems) subject to the requirements of this appendix. Equipment need not be individually identified if all equipment in a designated area or length of pipe subject to the provisions of this appendix are identified as a group, and the number of components of each type of equipment (pumps, valves, etc.) subject is indicated. The list for each type of equipment shall be complete no later than the completion of the initial survey required for that component. The list of identification numbers shall be updated, if needed, to incorporate equipment changes within 15 calendar days of the completion of each monitoring survey for the type of equipment component monitored.

(ii) A schedule for monitoring connectors subject to the provisions of § 63.174(a) and valves subject to the provisions of § GGGA-6(d) of this appendix.

(iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment subject to the provisions of this appendix may be identified on a plant site plan, in log entries, or by other appropriate methods.

(2)(i) A list of identification numbers for equipment that the owner or operator elects to equip with a closed-vent system and control device, under the provisions of § GGGA-4(g), § 63.164(h), or § 63.165(c).

(ii) A list of identification numbers for compressors that the owner or operator elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of § 63.164(i).

(3)(i) A list of identification numbers for pressure relief devices subject to the provisions in § 63.165(a).

(ii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of § 63.165(d).

(4) Identification of instrumentation systems subject to the provisions of this appendix. Individual components in an instrumentation system need not be identified.

(5) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by § 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(6) The following information shall be recorded for each dual mechanical seal system:

(i) Design criteria required in §§ GGGA-4(e)(6)(i) and 63.164(e)(2), and an explanation of the design criteria; and

(ii) Any changes to these criteria and the reasons for the changes.

(7) The following information pertaining to all equipment subject to the requirements of § GGGA-7, and all equipment subject to the requirements of § GGGA-3(a)(5)(iii) shall be recorded:

(i) Identification of equipment designated as unsafe to monitor, difficult to monitor, or inaccessible and the plan for monitoring or inspecting this equipment.

(8)(i) A list of valves removed from and added to the process, as described in § GGGA-6(e)(1) of this appendix, if the net credits for removed valves is expected to be used.

(ii) A list of connectors removed from and added to the process, as described in § 63.174(i)(1), and documentation of the integrity of the weld for any removed connectors, as required in § 63.174(j). This is not required unless the net credits for removed connectors is expected to be used.

(9) For batch processes that the owner or operator elects to monitor as provided under § 63.178(c), a list of equipment added to batch product processes since the last monitoring period required in §§ 63.178(c)(3)(ii) and (3)(iii). This list must be completed for each type of equipment within 15 calendar days of the completion of the each monitoring survey for the type of equipment monitored.

(c) For visual inspections of equipment subject to the provisions of this appendix [e.g., §§ GGGA-4(b)(3), GGGA-4(e)(4)(i)], the owner or operator shall document that the inspection was conducted and the date of the inspection. The owner or operator shall maintain records as specified in paragraph (d) of this section for leaking equipment identified in this inspection, except as provided in paragraph (e) of this section. These records shall be retained for 2 years.

(d) When each leak is detected as specified in §§ GGGA-4 and 63.164; §§ GGGA-6 and 63.169; and §§ 63.172 and 63.174 of this subpart, the following information shall be recorded and kept for 2 years:

(1) The instrument and the equipment identification number and the operator name, initials, or identification number.

(2) The date the leak was detected and the date of first attempt to repair the leak.

(3) The date of successful repair of the leak.

(4) If postrepair monitoring is required, maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(i) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(ii) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked onsite before depletion and the reason for depletion.

(6) If repairs were delayed, dates of process shutdowns that occur while the equipment is unrepaired.

(7)(i) If the alternative in § 63.174(c)(1)(ii) is not in use for the monitoring period, identification, either by list, location (area or grouping), or tagging of connectors disturbed since the last monitoring period required in § 63.174(b), as described in § 63.174(c)(1).

(ii) The date and results of follow-up monitoring as required in § 63.174(c). If identification of disturbed connectors is made by location, then all connectors within the designated location shall be monitored.

(8) The date and results of the monitoring required in § 63.178(c)(3)(i) for equipment added to a batch process since the last monitoring period required in §§ 63.178(c)(3)(ii) and (c)(3)(iii). If no leaking equipment is found in this monitoring, the owner or operator shall record that the inspection was performed. Records of the actual monitoring results are not required.

(9) Copies of the periodic reports as specified in § GGGA-9(d) of this appendix, if records are not maintained on a computerized data base capable of generating summary reports from the records.

(e) The owner or operator of a batch product process who elects to pressure test the batch product process equipment train to demonstrate compliance with this appendix is exempt from the requirements of paragraphs (b), (c), (d), and (f) of this section. Instead, the owner or operator shall maintain records of the following information:

(1) The identification of each product, or product code, produced during the calendar year. It is not necessary to identify individual items of equipment in a batch product process equipment train.

(2) Records demonstrating the proportion of the time during the calendar year the equipment is in use in a batch process that is subject to the provisions of this subpart. Examples of suitable documentation are records of time in use for individual pieces of equipment or average time in use for the process unit. These records are not required if the owner or operator does not adjust monitoring frequency by the time in use, as provided in § 63.178(c)(3)(iii).

(3) Physical tagging of the equipment to identify that it is in organic HAP service and subject to the provisions of this appendix is not required. Equipment in a batch product process subject to the provisions of this appendix

may be identified on a plant site plan, in log entries, or by other appropriate methods.

(4) The dates of each pressure test required in § 63.178(b), the test pressure, and the pressure drop observed during the test.

(5) Records of any visible, audible, or olfactory evidence of fluid loss.

(6) When a batch product process equipment train does not pass two consecutive pressure tests, the following information shall be recorded in a log and kept for 2 years:

(i) The date of each pressure test and the date of each leak repair attempt.

(ii) Repair methods applied in each attempt to repair the leak.

(iii) The reason for the delay of repair.

(iv) The expected date for delivery of the replacement equipment and the actual date of delivery of the replacement equipment.

(v) The date of successful repair.

(f) The dates and results of each compliance test required for compressors subject to the provisions in § 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in §§ 63.165(a) and (b). The results shall include:

(1) The background level measured during each compliance test.

(2) The maximum instrument reading measured at each piece of equipment during each compliance test.

(g) The owner or operator shall maintain records of the information specified in paragraphs (g)(1) through (g)(3) of this section for closed-vent systems and control devices subject to the provisions of § GGGA-3(a)(6). The records specified in paragraph (g)(1) of this section shall be retained for the life of the equipment. The records specified in paragraphs (g)(2) and (g)(3) of this section shall be retained for 2 years.

(1) The design specifications and performance demonstrations specified in paragraphs (g)(1)(i) through (g)(1)(iv) of this section.

(i) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(iii) The flare design (i.e., steam-assisted, air assisted, or nonassisted) and the results of the compliance demonstration required by § 63.11(b) of subpart A of this part.

(iv) A description of the parameter or parameters monitored, as required in § GGGA-3(a)(6)(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(2) Records of operation of closed-vent systems and control devices.

(i) Dates and durations when the closed-vent systems and control devices required in § GGGA-4 and §§ 63.164 through 63.166 are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame.

(ii) Dates and durations during which the monitoring system or monitoring device is inoperative.

(iii) Dates and durations of startups and shutdowns of control devices required in § GGGA-4 and §§ 63.164 through 63.166.

(3) Records of inspections of closed-vent systems subject to the provisions of § 63.172.

(i) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(ii) For each inspection conducted in accordance with the provisions of § 63.172(f)(1) or (f)(2) during which leaks were detected, the information specified in paragraph (d) of this section shall be recorded.

(h) Each owner or operator of equipment subject to the requirements of §§ 63.175 and 63.176 shall maintain the records specified in paragraphs (h)(1) through (h)(9) of

this section for the period of the quality improvement program for the equipment.

(1) For owners or operators who elect to use a reasonable further progress quality improvement program, as specified in § 63.175(d):

(i) All data required in § 63.175(d)(2).

(ii) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter.

(iii) The beginning and ending dates while meeting the requirements of § 63.175(d).

(2) For owners or operators who elect to use a quality improvement program of technology review and improvement, as specified in § 63.175(e):

(i) All data required in § 63.175(e)(2).

(ii) The percent leaking valves observed each quarter.

(iii) Documentation of all inspections conducted under the requirements of § 63.175(e)(4), and any recommendations for design or specification changes to reduce leak frequency.

(iv) The beginning and ending dates while meeting the requirements of § 63.175(e).

(3) For owners or operators who elect to use the pump quality improvement program as specified in § 63.176:

(i) All data required in § 63.176(d)(2).

(ii) The rolling average percent leaking pumps.

(iii) Documentation of all inspections conducted under the requirements of § 63.176(d)(4), and any recommendations for design or specification changes to reduce leak frequency.

(iv) The beginning and ending dates while meeting the requirements of § 63.176(d).

(4) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair.

(5) Records of all analyses required in §§ 63.175(e) and 63.176(d). The records will include the following:

(i) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices.

(ii) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials.

(iii) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under §§ 63.175(e)(6)(iii) and 63.176(d)(6)(iii).

(iv) The beginning date and duration of performance trials of each candidate superior emission performing technology.

(6) All records documenting the quality assurance program for valves or pumps as specified in §§ 63.175(e)(7) and 63.176(d)(7).

(7) Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in § 63.175(e)(7) and § 63.176(d)(7).

(8) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in § 63.176(d)(8).

(9) If exempted by § 63.175(e)(6)(v) or § 63.176(d)(6)(v), information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services.

(i) Information, data, and analysis used to determine that a piece of equipment or process is in heavy liquid service shall be recorded. Such a determination shall include an analysis or demonstration that the process fluids do not meet the criteria of "in light liquid or gas service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge.

(j) Identification, either by list, location (area or group) of equipment in organic HAP service less than

300 hours per year subject to the provisions of this appendix.

(k) Owners and operators choosing to comply with the requirements of § 63.179 shall maintain the following records:

(1) Identification of the process(es) and the organic HAP's they handle.

(2) A schematic of the process, enclosure, and closed-vent system.

(3) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device.

§ GGGA-9 Reporting Requirements

(a) Each owner or operator of a source subject to this appendix shall submit the reports listed in paragraphs (a)(1) through (a)(5) of this section. Owners or operators requesting an extension of compliance shall also submit a report as described in § 63.6 of subpart A.

(1) An Initial Notification as described in § 63.9 of subpart A, and

(2) A Notification of Compliance Status described in paragraph (c) of this section,

(3) Periodic Reports described in paragraph (d) of this section, and

(4) [Reserved]

(5) [Reserved]

(b) Each owner or operator of a source subject to this appendix shall submit a Notification of Compliance Status within 90 days after the compliance dates specified in § 63.1250(e).

(1) The notification shall provide the information listed in paragraphs (b)(1)(i) through (b)(1)(iii) of this section for each process subject to the requirements of §§ GGGA-3 through GGGA-8 of this appendix.

(i) Process identification.

(ii) Approximate number of each equipment type (e.g., valves, pumps) in organic HAP service, excluding equipment in vacuum service.

(iii) Method of compliance with the standard (for example, "monthly leak detection and repair" or "equipped with dual mechanical seals").

(2) The notification shall provide the information listed in paragraphs (b)(2)(i) and (b)(2)(ii) of this section for each process subject to the requirements of § 63.178(b).

(i) Batch products or product codes subject to the provisions of this appendix, and

(ii) Planned schedule for pressure testing when equipment is configured for production of products subject to the provisions of this appendix.

(3) The notification shall provide the information listed in paragraphs (b)(3)(i) and (b)(3)(ii) of this

section for each process subject to the requirements in § 63.179.

(i) Process identification.

(ii) A description of the system used to create a negative pressure in the enclosure and the control device used to comply with the requirements of § GGGA-3(a)(6).

(4) Any change in the information submitted under this paragraph (b) shall be provided to the Administrator as a part of subsequent Periodic Reports. Section 63.9(j) shall not apply to the Notification of Compliance Status described in this paragraph (b).

(c) The owner or operator of a source subject to this appendix shall submit Periodic Reports.

(1) A report containing the information in paragraphs (c)(2), (c)(3), and (c)(4) of this section shall be submitted semiannually starting 6 months after the Notification of Compliance Status, as required in paragraph (b) of this section. The first periodic report shall cover the first 6 months after the compliance date specified in § 63.1250(e). Each subsequent periodic report shall cover the 6 month period following the preceding period.

(2) For equipment complying with the provisions of §§ GGGA-3 through GGGA-8 of this appendix, the summary information listed in paragraphs (i) through (xii) of this paragraph for each monitoring period during the 6-month period.

(i) The number of valves for which leaks were detected as described in § GGGA-6(b) of this appendix, the percent leakers, and the total number of valves monitored;

(ii) The number of valves for which leaks were not repaired as required in § GGGA-6(f) of this appendix, identifying the number of those that are determined nonrepairable;

(iii) The number of pumps and agitators for which leaks were detected as described in § GGGA-4(b) of this appendix, the percent leakers, and the total number of pumps and agitators monitored;

(iv) The number of pumps and agitators for which leaks were not repaired as required in § GGGA-4(c) of this appendix;

(v) The number of compressors for which leaks were detected as described in § 63.164(f);

(vi) The number of compressors for which leaks were not repaired as required in § 63.164(g);

(vii) The number of connectors for which leaks were detected as described in § 63.174(a), the percent of connectors leaking, and the total number of connectors monitored;

(viii) The number of connectors for which leaks were not repaired as required in § 63.174(d), identifying the number of those that are determined nonrepairable;

(ix) The facts that explain any delay of repairs and, where appropriate, why a process shutdown was technically infeasible.

(x) The results of all monitoring to show compliance with §§ 63.164(i), 63.165(a), and 63.172(f) conducted within the semiannual reporting period.

(xi) If applicable, the initiation of a monthly monitoring program under either §§ GGGA4-(d)(2)(i) or GGGA-6(d)(1)(i) of this appendix, or a quality improvement program under either § 63.175 or 63.176.

(xii) If applicable, notification of a change in connector monitoring alternatives as described in § 63.174(c)(1).

(3) For owners or operators electing to meet the requirements of § 63.178(b), the report shall include the information listed in paragraphs (i) through (v) of this paragraph for each process.

(i) Batch product process equipment train identification;

(ii) The number of pressure tests conducted;

(iii) The number of pressure tests where the equipment train failed either the retest or two consecutive pressure tests;

(iv) The facts that explain any delay of repairs; and

(v) The results of all monitoring to determine compliance with § 63.172(f) of this subpart.

(4) Any revisions to items reported in earlier Notification of Compliance Status, if the method of compliance has changed since the last report or any other changes to the information reported has occurred.